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Documentation For ICT-Based Application

DIGITAL TRANSFORMATION IN SPECIAL EDUCATION

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Foreword

Digital transformation in education is not merely the integration of technological tools into classrooms, but also the process of creating an inclusive learning ecosystem sensitive to the individual needs of every student. The most critical pillar of this transformation is the improvement of educational processes for individuals with special needs.

Prepared within the scope of the project "DIGITAL TRANSFORMATION IN SPECIAL EDUCATION" (Project No: 2023-1-TR01-KA220-SCH-000160579), this resource aims to shed scientific and practical light on the complex nature of special education. Our work covers a wide spectrum, ranging from specific learning difficulties such as Dyslexia and Dyscalculia to ADHD and Autism Spectrum Disorder and from emotional processes like Depression and Anxiety, to Visual and Hearing impairments.

This document serves as a structured guide for educators and specialists. For each special needs area, the following fundamental questions have been addressed:

- Diagnostic processes based on DSM-5-TR criteria, prevalence rates, and the differentiation of scientific facts from misconceptions (myths).
- Diagnosis and assessment processes in Turkey, Croatia, the Netherlands, North Macedonia, and Lithuania.
- Recognition of in-class symptoms and concrete, actionable solutions for teachers.

In the digital age, unlocking the potential of students with special needs requires focusing not on “what they cannot do,” but on “what they can achieve” with the right support. This work provides our educators with a strong roadmap for early recognition of differences in their students and for providing them with the most appropriate digital and pedagogical support.

We hope that our project, through cross-border cooperation, will create a lasting impact in the field of special education; and we thank all our contributing partners and the Turkish National Agency for their support.

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Table of contents

Dyslexia

What is it?

Specific Learning Disability (SLD) is a neurodevelopmental disorder characterized by performance significantly below expectations in academic skills such as reading, writing, mathematics, or verbal expression, despite the individual's standard intelligence level (IQ ≥85) and adequate educational opportunities (DSM-5-TR, 2022). Dyslexia is the most common subtype of SLD and primarily arises due to impaired phonological processing (distinguishing sounds, matching letter-sound) (Lyon et al., 2003). This condition is independent of visual or auditory perception problems, intellectual disability, or socioeconomic disadvantages. The International Dyslexia Association (IDA) defines dyslexia as a "language-based learning difference" and emphasizes that early intervention is critical (IDA, 2017). Individuals with SLD can achieve academic and social adjustment with strategic teaching methods but exhibit a lifelong profile (Shaywitz, 2003).

What are the causes?

Genetic Factors (50-60% Effect)

- Family Studies: The risk increases 4-8 times in first-degree relatives of individuals with dyslexia (Pennington & Bishop, 2009).
- Specific Genes: Polymorphisms in the DCDC2, KIAA0319, and DYX1C1 genes affect language processing networks by disrupting the neuronal migration process (Grigorenko et al., 2020).

Neurobiological Factors

- Brain Structure: Gray matter deficiency in the left temporo-parietal region and weakness in the integrity of the arcuate fasciculus (language pathway) (fMRI studies; Shaywitz et al., 1998).
- Neurochemical: Dopamine transporter gene (DAT1) variations reduce attention and processing speed (Norton et al., 2014).

Environmental and Other Factors

- **Prenatal: Premature birth (<37 weeks), low birth weight (<2500 g) increases the risk by 2 times (Taylor et al., 2018).**
- **Acquired Later: Traumatic brain injury (TBI) or childhood epilepsy can disrupt phonological networks.**

Prevalence in the world and participating countries

Global

5-15% in children (APA, 2022), 4-8% in adults (British Dyslexia Association, 2022).

Prevalence in Turkey

According to MEB (2021) data, 7.2% in primary school age (5.1% in girls, 9.3% in boys).

35% of applications to Educational Assessment and Guidance Centers (RAM) are diagnosed with SLD (Specific Learning Disability Association Report, 2023).

- **Gender Difference:** Diagnosed 2-3 times more in males, but the rate of being overlooked is high in females (Quinn & Wagner, 2015).

Prevalence in the Netherlands

Approximately 3-5% of Dutch school-age children have severe dyslexia. The diagnosis is made by specialised remedial teachers or psychologists using national protocols (Protocol Dyslexia Diagnosis and Treatment). Children are usually referred via the school or the SWV. Treatment is partly covered by the Youth Act and is often carried out by specialized institutions.

Prevalence In North Macedonia

Official data on dyslexia's exact rate are limited because of inconsistent screening and diagnosis across the country. Nonetheless, educational experts and NGOs estimate that about 5% to 10% of school children may show signs of dyslexia. Reports from inclusive education departments and civil society groups involved in special education highlight increasing awareness of dyslexia, especially in urban schools.

Prevalence in Lithuania

According to the State Data Agency and the National Education Agency, dyslexia is categorized under special educational needs (SEN), but specific statistics on dyslexia alone are not always isolated. Please note that the data regarding the number of school pupils with special educational needs at the beginning of the last five academic years is presented in Table 1 (see annex).

However, broader data on SEN and disability in education show:

- In the 2018–2019 school year, 11.6% of pupils in mainstream classes had special educational needs.
- Among pupils with SEN, boys are significantly more represented than girls, consistent with global trends. In Lithuania, boys make up 26.6% of low achievers, compared to 13.3% of girls.
- In special schools and education centers, 92.5% of pupils had disabilities, with a portion of these likely including dyslexia.

Misconceptions (Scientific Facts)

- Dyslexia is seeing or writing letters backwards.

Fact: Dyslexia is not a visual problem but a phonological processing disorder. "b-d" mixing stems from the difficulty in distinguishing the sounds of letters (International Dyslexia Association [IDA], 2020).

- Individuals with dyslexia have low intelligence.

Fact: Dyslexia is unrelated to intelligence. In WISC-V tests, verbal reasoning (VCI) scores of dyslexic individuals are usually normal or high (Winner et al., 2001).

- Correcting writings repeatedly fixes dyslexia.

Fact: Traditional correction methods do not work. Multi-sensory learning (e.g., Orton-Gillingham method) is necessary (Shaywitz, 2003).

- Dyslexia is completely curable.

Fact: Dyslexia is a lifelong difference, but its effects can be minimized with early intervention (Lyon et al., 2003).

- Dyslexia is only seen in complex languages such as English.

Fact: It is seen in all languages. Reading speed is less affected in transparent languages such as Turkish compared to English (Ziegler & Goswami, 2005).

- Dyslexia only occurs in children, it disappears in adults.

Fact: Adult dyslexics continue to experience difficulties in reading speed and written expression (Mortimore, 2008).

- Children with dyslexia are lazy or uninterested.

Fact: It is of neurological origin. It should not be confused with Attention Deficit Hyperactivity Disorder (ADHD) (Pennington & Bishop, 2009).

- Eye exercises or colored lenses correct dyslexia.

Fact: Iridis lenses or visual therapy are not evidence-based methods for dyslexia (American Academy of Pediatrics, 2014).

- Individuals with dyslexia can never read well.

Fact: Fluency can be achieved with the right strategies (audiobooks, assistive technology) (IDA, 2017).

- Dyslexia is a rare condition.

Fact: It affects 10-15% of the world's population. In Türkiye, there are an average of 1-2 dyslexic students in every classroom (MEB, 2021).

How to recognize dyslexia

Reading Difficulties

- Syllable skipping: Errors such as reading "kok" instead of "Ko-nak" are common. This is due to a lack of phonological awareness (Torgesen, 2004).
- Slow reading: The number of words read per minute is 30% below their peers. Letter-sound matching is not automated (Wolf & Katzir-Cohen, 2001).
- Line tracking problem: They need to follow with their finger because their eye tracking skills are weak.

Writing Problems

- Mirror writing: Mixing "d-b", "p-q" is common, especially in the 1st-2nd grades. It is an indicator of neurodevelopmental delay (Habib, 2000).
- Dotted letters: Difficulty distinguishing "ı-i", "o-ö" is associated with fine motor skills and visual discrimination problems.
- Irregular writing: Not following the line, inconsistency in letter sizes (symptom of dysgraphia).

Organizational Difficulties

- Notebook clutter: The page layout is messy; there is a tendency to write right-left/left-right.
- Time management: Situations such as finishing a 20-minute homework in 1 hour are common. It is associated with low processing speed (Berninger et al., 2006).

Verbal Expression Preference

- They request to do oral presentations instead of written exams.
- Reason: The working memory load is less in verbal (Swanson & Siegel, 2001).

Instruction Processing Problems

- They get lost after the first 2 steps in multi-step instructions such as "Open your notebook, write the date on the right page, then solve the 3rd problem".
- Reason: Auditory processing and working memory capacity are limited (Gathercole & Alloway, 2008).

Difficulty Finding Words

- They use expressions such as "Thing... that... box... thing...".
- Basic reason: Access to the mental lexicon (mental dictionary) is slow (Snowling, 2013).

Numerical Errors

- Writing numbers backwards: Mixing "6-9", "12-21" may be a sign of dyscalculia.
- Simple operations: Unautomated skills such as multiplying instead of adding (Geary, 2004).

Avoidance Behaviors

- They develop tactics such as going to the toilet frequently or breaking pencils while copying writing from the board.
- Psychological infrastructure: It is associated with learned helplessness and anxiety disorder (Singer, 2005).

Dyslexia diagnostic criteria (According to DSM-5-TR)

Specific Learning Disorder (Dyslexia Subtype) Diagnostic Criteria:

A. At least one of the following symptoms (lasting for more than 6 months and causing difficulty in academic skills expected for the person's age):

- Reading accuracy (inability to read words correctly)
- Reading speed or fluency (slow, effortful reading)
- Reading comprehension

B. Affected academic skills, when assessed with standard tests (e.g., TOWRE, WIAT), perform at least 1.5 standard deviations (SD) below the person's chronological age.

C. Becomes apparent in the early school years (but may not be noticed until periods when academic demands increase).

D. Cannot be better explained by other factors:

- Mental disability
- Vision/hearing loss
- Neurological disorders (e.g., cerebral palsy)
- Psychosocial disadvantage
- Insufficient education

Special learning disability (dyslexia) diagnostic process in the participating countries

Special learning disability (dyslexia) diagnostic process in Turkey

Preliminary Screening and Referral

- Classroom Observation: The classroom teacher evaluates the student's academic and behavioral performance using the MoNE Form-1 (Special Education Evaluation Request Form). This form includes critical indicators such as reading-writing speed, spelling errors, and attention span.
- School Counseling Service: In line with the teacher's observations, the school counseling service may administer preliminary assessment tools to the student and decide to refer them to the RAM.

RAM Application and Documents

- Required Documents:
    - Written application petition filled out by the parent/school.
    - Educational Assessment Request Form (for initial application) or Individual Development Report (for re-evaluation).
    - Disability Health Board Report (if available, a disability rate of 20% or higher is required).
    - Photocopies of the student's and parent's identity cards.

RAM Evaluation Process

- Tests and Applications:
    - WISC-IV: Intelligence quotient (IQ) and processing speed (PSI) are measured. In dyslexia, PSI is low, and verbal comprehension (VCI) is within normal limits.
    - Bender-Gestalt Visual Motor Perception Test: Visual-motor coordination is evaluated.
    - RWFT (Reading Speed and Fluency Test): Fluent reading skill is analyzed.
    - Development History: Information is obtained from the family regarding pregnancy, birth, and early childhood.

Special Education Assessment Board

- The board consisting of the assistant principal, special education teacher, and guidance counselor at RAM evaluates the test results and observations.
- The parent can also attend the board meeting and express their opinion.

Diagnosis Decision and IEP Preparation

- Criteria: According to DSM-5-TR, academic skills should be 1.5 standard deviations below age level performance, and other exclusionary factors (vision/hearing loss, mental disability) should not be present.
- Individualized Education Plan (IEP):
    - Prepared within 45 days after diagnosis.
    - Reading-writing strategies (e.g., multi-sensory learning) and exam adaptations (extra time, oral assessment) are planned according to the student's needs 8.

Placement and Monitoring

- Education Environment: According to the RAM report, the student:
    - May receive inclusive education.
    - May receive 8-10 hours of private lessons per week from the support education room.
    - May be referred to special education schools (in severe dyslexia cases) 28.
- Monitoring: Performance evaluation is carried out by RAM at least once a year, and the IEP is updated.

Dyslexia diagnosis process in Croatia

Preliminary Screening and Referral

- **Classroom Observation:** The classroom teacher evaluates the student's academic and behavioral performance with nonformal opservation. This form includes critical symptoms such as reading-writing speed, spelling errors, and attention span.
- **School Counseling Service:** In line with the teacher's observations, the school counseling service consisting of a psychologist, a pedagogue, an educational rehabilitator, a school medicine doctor and a classroom teacher. They agree to send the child to a team assessment (the assessment can be done in the school if the school has appropriate assessment tests, and if not, then the child/student goes to an external institution where the team assessment is carried out).

Application and Documents

- **Required Documents:**
  The consent of the parents is required in order to start the observation process and the assessment process so that the child receives a Decision on the appropriate form of education.

RAM Evaluation Process

- Tests and Applications:
    - **WISC-IV:** Intelligence quotient (IQ) and processing speed index (PSI) are measured. In dyslexia, PSI is low, and verbal comprehension index (VCI) is within normal limits.
    - **Bender-Gestalt Visual Motor Perception Test:** Visual-motor coordination is evaluated.
    - A special assessment test is needed that can only be conducted by a speech therapist and the child can be diagnosed with dyslexia at the end.
    - **Developmental History:** Information is obtained from the family regarding pregnancy, birth, and early childhood period.
- Special Education Assessment Board:
    - After having an insight into all the findings and opinions from the experts, the expert committee makes a joint proposal on the appropriate form of education. The official document is called "Decision on the appropriate form of education".

Diagnosis Decision and IEP Preparation

- **Criteria:** If the County Office of Education and the Ministry of Science and Education issue a "Decision on the appropriate form of schooling", the school educational rehabilitator (or one of the members of the professional service) informs and informs the teachers' council of the decision and advises the teachers that they should create an individualized curriculum for each subject the child attends.
- **Individualized Education Plan (IEP):**
    - It is made on the beginning of school year (from the beginning of the academic year).

Placement and Monitoring

- **Education Environment:** The student:
  - Receives inclusive education.
  - May receive special treatment with educational rehabilitator at least once a week.
- **Monitoring:** The teacher and the professional service of the school monitor the progress of the students.

Dyslexia diagnostic process in the Netherlands

- Identification begins at school, usually in year 3 or 4, after persistent reading and spelling problems despite extra support (at least three intervention periods).
- The school documents this in a pupil file, including test results, action plans and evaluations.
- If progress is insufficient, a referral is made to a specialised dyslexia therapist or remedial educationalist/psychologist.
- Diagnosis takes place in accordance with the Dyslexia Diagnosis and Treatment Protocol (PDDB), using standardised tests (including DMT, AVI, spelling tests).

Application via SWV

- In consultation with the parent(s)/guardian(s), the school submits the pupil's file and the application for dyslexia assessment to the SWV for appropriate education.
- **Required documents:** overview of interventions provided, test results, action plans and evaluations.

Evaluation process SWV

- The SWV assesses whether the national criteria for severe single dyslexia (EED) have been met.
- Advice is sought from experts (orthopedagogue-generalist, mental health psychologist).

Diagnosis decision

- If the criteria are met, the diagnosis is officially confirmed by the competent professional.
- Parents receive a report with the decision and any treatment recommendations.

Placement and monitoring

- Treatment takes place at accredited institutions, funded through the Youth Act in cases of severe single dyslexia.
- The school remains responsible for providing appropriate education, with support from the SWV.
- Progress is periodically evaluated by the practitioner, school and parents.

Dyslexia Diagnosis Process in North Macedonia

Preliminary Screening and Referral

- **Classroom Observation:** Teachers play a key role in the early detection of students who might have learning difficulties. When signs such as ongoing problems with reading fluency, letter reversals, or comprehension issues are noticed, the teacher records these challenges in a formal pedagogical report.
- **School Support Team Consultation:** The teacher consults with the school's internal support team (composed of a psychologist, pedagogue, and/or special educator) to assess the severity and consistency of the symptoms. If necessary, a referral is made to external professional services.

Multidisciplinary Assessment

- **Psychological and Pedagogical Evaluation:** The child is referred to the Institute for Mental Health of Children and Adolescents or one of the Regional Centers for Educational Support, where a psychologist conducts cognitive and learning assessments (e.g., standardized IQ and achievement tests).
- **Speech and Language Assessment:** If necessary, a speech therapist evaluates language processing and phonological awareness skills, which are key indicators of dyslexia.

Formal Diagnosis and Categorization

- A team of professionals makes the diagnosis (psychologist, special educator, speech therapist) based on test results, school performance, and parental input.
- A child diagnosed with dyslexia may be categorized under "students with specific learning difficulties" in accordance with the Law on Primary Education (2019), which supports the right to individualized support programs.

Individualized Educational Plan (IEP) Implementation

- Following the diagnosis, the school develops an IEP with accommodations such as extended time on tests, oral assessment options, and reduced homework load.
- Teachers and special educators work collaboratively with parents to ensure consistent support and monitoring of the student's progress.

Referral to Educational-Psychological Services and Required Documentation

Required Documents:

- A written referral from the school psychologist, pedagogue, or class teacher based on observed learning difficulties.
- A pedagogical report detailing the student's academic performance, learning history, and classroom behavior.
- Medical or developmental history records (if available), especially when co-occurring developmental delays are suspected.
- Parent/guardian consent form for assessment procedures.
- Copies of the student's and parent's identification documents.

Diagnostic Assessment Process

- **Testing and Evaluation Tools:** WISC-IV or Raven’s Progressive Matrices (depending on availability): Assesses general intelligence and processing abilities. In dyslexia, the processing speed index (PSI) is often significantly lower than other indexes.
- **Reading and Writing Achievement Tests:** Local or adapted standardized tests are used to assess decoding skills, fluency, and comprehension (e.g., adapted versions of the Gray Oral Reading Test or informal reading inventories).
- **Visual-Perceptual and Visual-Motor Tests:** Tools like the Bender-Gestalt Test or Frostig Developmental Test of Visual Perception may be applied.
- **Developmental History Interview:** Conducted with parents to gather data on early language development, cognitive milestones, and school readiness.

Multidisciplinary Team Assessment:

- Typically includes a psychologist, special educator, speech therapist, and school pedagogue.
- Observations and test results are jointly analyzed.
- Parents are invited to participate in feedback meetings and contribute insights.

Diagnosis and Individualized Education Plan (IEP) Development

Diagnostic Criteria:

- In line with DSM-5 and ICD-11, a diagnosis of Specific Learning Disorder with impairment in reading (dyslexia) is made if the student performs significantly below expected age-level reading standards, excluding other disabilities like intellectual disability or sensory impairments.
- Diagnosis is confirmed only after at least 6 months of targeted intervention shows minimal progress.

IEP Implementation:

- Once the diagnosis is formalized, the school-based team develops an Individualized Education Plan (IEP) within 30–45 days.
- IEP includes multi-sensory reading instruction, individual or small-group support, and testing accommodations (such as extra time, oral exams, and reduced reading load).
- Parents and teachers are actively involved in drafting and approving the IEP.

Educational Placement and Progress Monitoring

Educational Setting Options:

- Most students with dyslexia are integrated into mainstream classrooms with in-class support from special educators.
- In cases of moderate to severe learning challenges, students may receive supplementary lessons (6–10 hours per week) through the Resource Center for Inclusive Education or support teacher services within the school.
- Placement in specialized institutions is rare and generally reserved for students with multiple or complex disabilities.

Progress Monitoring and Reevaluation:

- The student's academic performance and developmental progress are monitored quarterly by the school team.
- A formal reassessment by external professionals is usually conducted annually or upon significant change in performance.
- The IEP is updated at least once per academic year, and teaching strategies are adjusted as needed.

Dyslexia Diagnosis Process in Lithuania

Preliminary Screening and Referral

- **Classroom Observation:** Teachers monitor students' reading and writing progress. If persistent difficulties are observed, they refer the student for further evaluation.
- **School Counseling Service:** Pedagogical-Psychological Services (PPS), co-funded by municipalities and national programs, support schools in identifying learning difficulties. These services include consultations with special education professionals.

Application and Documents

Required Documents:

- Referral from a teacher or school psychologist.
- Parental consent.
- Educational history and samples of student work.
- Medical or developmental history if relevant.

Evaluation Process

Tests and Applications:

- Standardized assessments for reading, phonological processing, and cognitive abilities.
- Tools may include international instruments adapted for Lithuanian use, such as DIBELS or PAR.

Special Education Assessment Board:

- A multidisciplinary team (special educators, psychologists, speech therapists) reviews the results.
- The board operates within PPS or designated regional centers.

Diagnosis Decision and IEP Preparation

Criteria:

- Significant discrepancy between reading/spelling skills and age or intellectual ability.
- Persistent difficulties despite targeted interventions.

Individualized Education Plan (IEP):

- Developed by the school in collaboration with specialists and parents.
- Includes goals, accommodations, and teaching strategies tailored to the student's needs.

Placement and Monitoring

Education Environment**:**

- Students with dyslexia are typically integrated into mainstream classrooms.
- Special classes or resource centers are available for more intensive support.

Monitoring**:**

- Regular reviews of progress by teachers and PPS specialists.
- Adjustments to the IEP are made as needed.
- Mobile specialist teams may visit schools to provide additional support.

Recommendations for teachers

Use Alternative Presentation Methods Instead of Written Assessment

Written expression can be challenging for students with dyslexia. Instead, offer students ways such as:

- Making an oral presentation,
- Sending an audio recording (podcast),
- Preparing a video presentation.

These methods both more accurately reflect how the student learns information and increase their self-confidence.

Use Appropriate Font and Background in Reading Materials

For dyslexia-friendly texts:

- Prefer clear, simple fonts such as Arial, Verdana, or Comic Sans.
- Black text-cream paper combination provides visual comfort.
- Make it easier to follow the text with the eye by making line spacing 1.5 or 2. (British Dyslexia Association recommendation)

Introduce Speech-to-Text Applications

To enable students to express their thoughts comfortably:

- Allow them to use applications such as Dragon NaturallySpeaking, Google Docs Voice Typing.
- These tools reduce the student's anxiety about writing and increase productivity.

Teach Coding

With simple block-based programming (e.g., Scratch):

- Students learn step-by-step thinking and logical flow.
- It particularly supports problem-solving and sequential thinking skills in students with dyslexia.

Implement Shadow Student Practice

Observe the daily school experience of a student with dyslexia:

- Take note of how they struggle during the day and in which areas they need support.
- This method increases the teacher's level of empathy and provides targeted support.

Use Visual Supports and Diagrams

Instead of written information for students with dyslexia:

- Use mind maps, flow charts, icons, illustrated instructions.
- It facilitates learning and strengthens memory.

Use Digital Books and Audio Reading Applications

For students who have difficulty reading texts:

- Audiobooks (Tübitak audiobooks, Storytel),
- Text-to-speech applications (NaturalReader, Read&Write),
- Recommend software that provides audio reading via PDF files.

Give Tasks Divided into Pieces

Long and complex assignments:

- Divide into small, step-by-step tasks.
- Provide a clear timeline for each stage. This method increases the student's motivation and task completion skills.

Use Dual Task Software

Use tools that allow the student to both listen and read (e.g., Voice Dream Reader):

- Texts are voiced and highlighted simultaneously.
- In this way, both auditory and visual learning are supported.

Give Development-Oriented Feedback, Not Error-Oriented

Students with dyslexia may often make mistakes such as skipping letters or mixing syllables while writing.

- Present feedback not as "wrong" but as an "area for improvement."
- For example: "There is a great idea in this sentence, it would be more understandable if we organize it a little more."

This approach increases the student's motivation and self-confidence.

Summary

What is it?

Dyslexia is a learning difference characterized by neurological-based persistent difficulties in reading-writing and mathematics skills despite normal intelligence.

Causes:

Genetic factors (50-60%), different structuring of language processing networks in the brain, and lack of environmental stimuli in early childhood are the main causes.

Prevalence:

It affects 5-15% of children in the world and 7.2% of primary school children in Turkey according to MEB 2021 data.

False Beliefs:

False beliefs lead to misunderstanding this developmental difference.

In-Class Symptoms:

Skipping syllables, mirror writing, inability to follow multi-step instructions, and difficulty in time management are typical indicators.

Diagnostic Criteria:

According to DSM-5-TR, performance below 1.5 standard deviations of age level in standard tests and symptoms lasting for 6 months are required.

Education Strategies:

Teachers can prevent the negative effects of this developmental difference on education with different activities in the classroom.

Dyscalculia

What is it?

Dyscalculia is a neurodevelopmental disorder in which an individual experiences serious difficulties in basic mathematical operations and in understanding numerical concepts, despite having a normal level of intelligence and adequate educational opportunities. According to the DSM-5-TR diagnostic criteria of the American Psychiatric Association, this disorder is characterized by the individual's mathematics performance being significantly below what is expected for their chronological age. At the root of dyscalculia, there are structural and functional differences in the number processing centers in the brain (especially in the intraparietal sulcus region). These individuals often experience significant difficulties in recognizing numbers, understanding mathematical symbols, performing basic arithmetic operations, learning the multiplication table, and solving mathematical problems. For example, they may have difficulty associating the numeral "5" with the concept of "five", may need to count on their fingers for simple addition-subtraction operations, or may have difficulty interpreting mathematical terms such as "more" and "less". Dyscalculia is often seen in conjunction with dyslexia or attention deficit hyperactivity disorder (ADHD), but is recognized as an independent learning disability. This disorder, which is evaluated within the scope of special education by the Ministry of National Education in Turkey, is supported by individualized education programs (IEP). Significant improvements in the mathematical skills of these individuals can be achieved with early diagnosis and appropriate educational interventions.

What are the reasons?

The origins of dyscalculia are complex and multifactorial. Current research shows that the interaction of biological, genetic, and neurological factors underlies this mathematical learning disability.

Genetic Factors:

Family studies reveal that dyscalculia has a strong genetic component. In particular, certain gene variations (ROBO1, DYX1C1) located on chromosomes 3, 6, and 15 have been found to be associated with numerical processing skills. Twin studies show that dyscalculia may be up to 60% heritable (Shalev et al., 2001).

Neurobiological Factors:

Brain imaging studies have revealed structural and functional differences in the brain region called the intraparietal sulcus (IPS) in individuals with dyscalculia. This region is responsible for representing and processing numerical quantities (Dehaene, 2003). In addition, weak connections between the prefrontal cortex and parietal lobes negatively affect mathematical reasoning skills.

Prenatal and Postnatal Factors:

Prenatal risk factors such as premature birth, low birth weight, and fetal alcohol syndrome increase the risk of dyscalculia. After birth, neurological problems such as head trauma or epilepsy experienced in early childhood can also negatively affect the development of mathematical skills.

Environmental and Educational Factors:

Insufficient exposure to numerical concepts in early childhood, math anxiety, and inappropriate teaching methods can also exacerbate the symptoms of dyscalculia. However, these factors usually play a role in increasing the effects of underlying neurological differences, rather than being a primary cause.

Prevalence in the world and participating countries

Research on the prevalence of dyscalculia reveals that this mathematical learning disability is more common than previously thought. International studies show that approximately 3-7% of school-age children have clinical-level

dyscalculia (Devine et al., 2013). This rate means that an average of 1-2 students in each class are affected by this difficulty.

Gender Differences:

Dyscalculia, unlike dyslexia, shows an equal distribution between genders. However, some studies have revealed that girls are more likely to be undiagnosed (Geary, 2019).

Prevalence in Turkey: According to the Ministry of National Education 2022 data:

- 15-20% of students diagnosed with specific learning disabilities primarily have dyscalculia.
- 8% of applications to RAM are based on mathematical learning difficulties.
- Diagnosis rates are higher in urban areas compared to rural areas (depending on socioeconomic factors and level of awareness).

Prevalence in the Netherlands

An estimated 3-4% of children have serious math problems consistent with dyscalculia. Diagnosis is made through orthopedagogical testing, often after referral by the school. There are national guidelines for diagnosis, which require at least persistent math problems despite extra support. Treatment consists of specialized guidance at school or by specialized institutions.

Prevalence in North Macedonia

Currently, there is no centralized official data on the exact prevalence of dyscalculia in North Macedonia. However, special education professionals and psychologists estimate that approximately 3–7% of school-aged children may show signs of dyscalculia. According to case data collected from Centers for Educational and Psychological Services, a significant portion of students referred for learning difficulties display persistent mathematical skill deficits. The diagnosis rate tends to be higher in urban regions, reflecting better access to diagnostic services and greater teacher awareness.

Prevalence in Lithuania

- Dyscalculia is estimated to affect around 5% of primary school children, a figure consistent across international studies.
- While gender differences in dyscalculia are debated, research suggests that diagnostic criteria can influence observed gender ratios. Some studies show a slight male predominance, but others find no significant gender difference.
- Lithuania does not publish separate statistics for dyscalculia by gender. It is typically grouped under broader categories of special educational needs (SEN), making precise national data on dyscalculia prevalence by gender unavailable.

Misconceptions (Scientific Facts)

- Dyscalculia is a sign of low intelligence or laziness.

Fact: Individuals with dyscalculia have normal or above-normal intelligence. Mathematical difficulties stem from the different functioning of numerical processing centers in the brain (Butterworth, 2018).

- If he practices a lot, he will overcome this problem.

Fact: Practices with traditional methods are insufficient. Special education strategies (such as working with concrete materials) are necessary (Geary, 2004).

- He can only not learn the multiplication table, he has no other problems.

Fact: Dyscalculia affects a wide range of areas from basic number concepts (magnitude comparison, money calculation, etc.) to reading the clock (Landerl et al., 2004).

- It is more common in boys.

Fact: There is no significant difference between genders. Although the diagnosis rate of girls is low, this is related to social biases (Devine et al., 2013).

- It will improve if he uses a calculator.

Fact: A calculator can be supportive, but it does not eliminate the lack of number sense. Teaching basic mathematical concepts is essential (Dehaene, 2011).

- It goes away as you get older.

Fact: Dyscalculia lasts a lifetime. In adults, it turns into daily difficulties such as calculating bills and estimating distances (Shalev, 2005).

- He is good at mathematics because he has high visual intelligence.

Fact: Visual-spatial skills are not directly related to mathematical skills. Although some individuals with dyscalculia are successful in the field of art, this does not eliminate their mathematical difficulties (Kucian & Kaufmann, 2009).

- It is the same thing as math anxiety.

Fact: While math anxiety is psychological, dyscalculia is neurobiological in origin. Anxiety may accompany dyscalculia, but it is not the cause (Rubinsten & Tannock, 2010).

- He only has problems at school, it does not affect daily life.

Fact: Difficulties are also seen in daily tasks such as following bus schedules and calculating change when shopping (Parsons & Bynner, 2005).

- A person without dyslexia does not have dyscalculia.

Fact: Dyscalculia is an independent disorder. There are cases of "pure dyscalculia" that are not accompanied by dyslexia (Wilson et al., 2015).

How to recognize Dyscalculia

Students with dyscalculia lag significantly behind their peers in mathematical skills and exhibit the following typical behaviors:

Difficulties in Basic Numerical Skills (Primary School Period)

- Failure to understand the concept of number:
    - Cannot make a connection between the number "5" and "five" objects
    - Constantly makes mistakes in magnitude comparison (which number is bigger)
    - Skips after 10 when counting numbers (like 12-13-15)
- Arithmetic operation errors:
    - Excessive dependence on finger counting in addition/subtraction
    - Recalculating every time in simple operations (like 2+3)

- Inability to memorize or mixing up the multiplication table

Academic Symptoms After Middle School

Mixing up mathematical symbols:

- Frequently misreads "+" and "-" signs
- Swaps numerator/denominator when writing fractions (5/3 instead of 3/5)

Lack of strategy in problem solving:

- Does not know whether to add or subtract when "more" is said
- Has difficulty with clock problems (e.g. "2 hours 45 minutes later")

Difficulties in Daily Living Skills

Concepts of time and measurement:

- Has difficulty reading an analog clock
- Cannot concretize expressions such as "half a liter", "150 grams"

Money calculation:

- Cannot calculate change
- Has difficulty comparing prices (which product is cheaper)

Direction and spatial relations:

- Confuses left-right distinction
- Has difficulty finding the classroom number

Affective Responses

Math anxiety:

- Shows physical signs of stress before math class (sweating, stomachache)
- Uses generalizing statements such as "I can't do math"

Diagnostic criteria (According to DSM-5-TR)

At least one of the following symptoms must have persisted for at least 6 months and cause the person to perform significantly below the academic skills expected for their chronological age:

- Number perception (difficulty understanding the magnitude and relationship of numbers)
- Memorization of arithmetic facts (basic operations such as addition/subtraction)
- Accurate and fluent calculation
- Correct mathematical reasoning

Affected academic skills should be at least 1.5 standard deviations below when measured by standardized tests according to the person's age (e.g., WIAT, TEMA-3) (at a level that will affect school performance or daily living activities).

Symptoms appear in the early school years (but may not be fully observed until later grades when mathematical demands increase).

These difficulties cannot be better explained by intellectual disability, vision/hearing loss, other neurological or mental disorders, psychosocial disadvantages, or inadequate exposure to the language of instruction.

Dyscalculia diagnosis process in the participating countries

Dyscalculia diagnosis process in Turkey

Pre-Screening and Referral

- **Classroom Observation:** The classroom teacher evaluates the student's academic and behavioral performance with MEB Form-1 (Special Education Evaluation Request Form). This form includes critical symptoms such as reading-writing speed, spelling errors, attention span.
- **School Counseling Service:** In line with the teacher's observations, the school counseling service may administer preliminary assessment tools to the student and decide to refer them to RAM.

RAM Application and Documents

- Required Documents:
    - Written application petition filled out by the parent/school.
    - Educational Evaluation Request Form (for initial application) or Individual Development Report (for re-evaluation).
    - Disability Health Board Report (if available, a disability rate of 20% or more is required).
    - Photocopies of student and parent identity cards.

RAM Evaluation Process

Preliminary Evaluation and School Process

- The "Special Education Evaluation Request Form" of the Ministry of Education is filled out by the classroom teacher. In this form:
    - Mathematical skill deficiencies (counting, performing operations, etc.)
    - Numerical difficulties in daily life (time, money calculation)
    - Problems lasting longer than 6 months are stated
- The school counseling service administers the "Basic Mathematics Skills Assessment Test" to the student
- The student's math notebook and exam papers are kept as a "product file"

Application to RAM and Documents

- Required Documents:
    - Parent petition (in MEB format)
    - School observation report (prepared jointly by the classroom teacher and guidance counselor)
    - Student's 2-year math grade chart
    - Family and development history form
    - Previous psycho-educational assessment reports, if any

Tests Applied at RAM (Approved by the Ministry of National Education)

- **Intelligence Assessment:** WISC-IV (with a special focus on PSI and WMI subtests)
- Mathematical Skill Tests:
    - TEMA-3 (Test of Early Mathematics Ability)

    - Mathematical Reasoning Test (Ministry of National Education General Directorate of Special Education)
    - Rough Assessment Form (number sense measurement)
- Neuropsychological Tests:
    - Digit Sequence Learning Test
    - Visual-Spatial Memory Test

Assessment Board Meeting

- Participants: RAM assistant director, special education teacher, psychologist, parent
- At the meeting:
    - All test results are reviewed individually
    - Compliance with DSM-5-TR criteria is checked
    - Test findings are compared with school observations
    - If dyscalculia is to be diagnosed, it is reported as "Specific Learning Disability (Mathematics)"

Practical Information:

- Average Process Time: 60-90 business days
- Fee: RAM assessments are free of charge
- Objection: If the parent objects to the diagnosis, a report may be requested from university hospitals
- Validity: RAM reports are valid for 1 year throughout Turkey

Dyscalculia diagnosis process in Croatia

Preliminary Screening and Referral

- **Classroom Observation:** The classroom teacher evaluates the student's academic and behavioral performance with nonformal opservation. This form includes critical symptoms such as reading-writing speed, spelling errors, and attention span.
- **School Counseling Service:** In line with the teacher's observations, the school counseling service consisting of a psychologist, a pedagogue, an educational rehabilitator, a school medicine doctor and a classroom teacher. They agree to send the child to a team assessment (the assessment can be done in the school if the school has appropriate assessment tests, and if not, then the child/student goes to an external institution where the team assessment is carried out).

Application and Documents

- **Required Documents:**
  The consent of the parents is required in order to start the observation process and the assessment process so that the child receives a ''Decision on the appropriate form of education''.

RAM Evaluation Process

- Tests and Applications:
    - **WISC-IV:** Intelligence quotient (IQ) and processing speed index (PSI) are measured. In dyslexia, PSI is low, and verbal comprehension index (VCI) is within normal limits.
    - **Bender-Gestalt Visual Motor Perception Test:** Visual-motor coordination is evaluated.
    - A special assessment test is needed that can only be conducted by a speech therapist and the child can be diagnosed with dyscalculia at the end.

    - **Developmental History:** Information is obtained from the family regarding pregnancy, birth, and early childhood period.
- Special Education Assessment Board:
    - **After having an insight into all the findings and opinions from the experts, the expert committee makes a joint proposal on the appropriate form of education. The official document is called "Decision on the appropriate form of education".**

Diagnosis Decision and IEP Preparation

- **Criteria:** If the County Office of Education and the Ministry of Science and Education issue a "Decision on the appropriate form of schooling", the school educational rehabilitator (or one of the members of the professional service) informs and informs the teachers' council of the decision and advises the teachers that they should create an individualized curriculum for each subject the child attends.
- Individualized Education Plan (IEP):
    - It is made on the beginning of school year (from the beginning of the academic year).

Placement and Monitoring

- Education Environment The student:
    - Receives inclusive education.
    - May receive special treatment with educational rehabilitator al least once a week.
- **Monitoring:** The teacher and the professional service of the school monitor the progress of the students.

Dyscalculia diagnostic process in the Netherlands

- Identification starts at school, often in years 5–6, when persistent math problems continue despite intensive extra support.
- The school compiles a pupil file with test results (e.g. Cito LOVS math), action plans and intervention evaluations.
- Diagnostic testing is carried out by a remedial educationalist or health psychologist, with intelligence testing and specific math tests.
- The national Protocol for Serious Math Problems and Dyscalculia (“ERWD”) is followed in this process.

Application via SWV

- In consultation with parents (guardians) and supported by the student file, the school can submit an application to the SWV.
- Required documents: test results, action plans, evaluation reports and observation data.

Evaluation process SWV

- The SWV assesses whether there are persistent, serious maths problems that meet the criteria for dyscalculia.
- Experts (remedial educationalist-generalist, mental health psychologist) are involved in the assessment.

Diagnosis decision

- The decision is made by a qualified diagnostician (remedial educationalist/health psychologist).

- Parents receive a report with the diagnosis and any recommendations for support.

Placement and monitoring

- There are no national reimbursement schemes for dyscalculia, as there are for dyslexia; support is provided by the school and the SWV.
- Schools offer compensatory and dispensatory measures (e.g. use of calculators, extra time).
- Progress is monitored periodically by the school and the SWV in consultation with parents.

Dyscalculia Diagnosis Process in North Macedonia

Preliminary Screening and Referral

- **Classroom Observation:** Teachers play a key role in identifying early signs such as:
- Persistent difficulty with basic arithmetic (counting, number sense, operations)
- Trouble with time, sequencing, money calculations
- Discrepancy between mathematical and verbal or reading skills

School Support Team Consultation:

- The class teacher consults with the school psychologist, pedagogue, or special educator
- An internal pedagogical profile is developed, and if signs are consistent over 6 months, referral for external assessment is initiated

Application and Required Documentation

Documents for External Referral:

- Formal referral form from the school
- Observation report signed by the teacher and school support staff
- Two-year mathematics report card summary
- Parental consent and a brief developmental and family history questionnaire
- Copies of the identification documents of the student and parent(s)

Multidisciplinary Assessment at Educational-Psychological Institutions

- Conducted at Regional Centers for Educational Support or Clinical Centers for Mental Health of Children and Youth

Tests and Procedures:

- **Cognitive Assessment:** WISC-IV or Raven's Matrices to measure IQ and working memory
- **Mathematical Achievement Tests: Locally developed or adapted tools, such as:** Arithmetic operations tasks, Number sense and estimation tasks, Problem-solving and reasoning assessments
- **Neuropsychological Screening:** Working memory and sequencing tests, Visual-spatial and attention tasks
- **Analysis of Student Work:** Review of math notebooks, class tests, and error patterns

Diagnostic Review and Criteria

A Diagnostic Board Meeting is held including:

- Educational psychologist
- Special educator
- Clinical psychologist (if needed)

- Parent(s)

During the meeting:

- Evaluation results are reviewed collectively
- Consistency with DSM-5 criteria for Specific Learning Disorder with impairment in mathematics is examined
- The team determines whether difficulties are specific and persistent, excluding intellectual disability, poor instruction, or socio-environmental causes
- The diagnosis, if confirmed, is officially recorded as "Specific Learning Difficulty – Mathematics (Dyscalculia)"

Post-Diagnosis Process and Support

IEP Development:

- Within 30–45 days, an Individualized Education Plan (IEP) is created
- It includes differentiated instruction in numeracy, adapted materials, extended time, calculator use, and frequent feedback
- Parents, teachers, and support staff collaborate on the plan

Educational Setting:

- The student remains in inclusive education with additional in-school support
- Support may include small-group intervention, 1-on-1 remedial sessions, or pull-out math instruction
- In severe cases, collaboration with a Resource Center is provided

Practical Information:

- **Duration of Process:** Typically 60–90 calendar days
- **Fee:** Public diagnostic services are free of charge
- **Appeals:** Parents may seek a second opinion from university clinics or private professionals
- **Validity:** The diagnostic report is typically valid for one academic year, and requires annual reassessment for continued support

Dyscalculia diagnosis process in Lithuania

Preliminary Screening and Referral

- **Classroom Observation:** Teachers monitor students for persistent difficulties with number sense, arithmetic, and math-related tasks. Signs include trouble with basic calculations, time concepts, and sequences.
- **School Counseling Service:** School psychologists or special education coordinators may initiate further evaluation if concerns persist. They collaborate with teachers and parents to gather behavioral and academic data.

Application and Documents

Required Documents:

- Referral from a teacher or school psychologist.
- Parental consent.

- Samples of student work and academic records.
- Developmental and medical history, if relevant.

Evaluation Process

Tests and Applications:

- Standardized tests such as the Kaufman Test of Educational Achievement (KTEA) or Wide Range Achievement Test (WRAT) are used to assess math skills [3].
- Psychological assessments may be conducted to rule out comorbid conditions like ADHD or dyslexia.

Special Education Assessment Board:

- A multidisciplinary team evaluates the results and determines whether the student meets criteria for dyscalculia.
- The board include psychologists, special educators, and speech therapists.

Diagnosis Decision and IEP Preparation

Criteria:

- Significant and persistent difficulty in acquiring arithmetic skills not explained by low intelligence or poor instruction.
- Often includes deficits in working memory, visuospatial skills, and number processing.

Individualized Education Plan (IEP):

- Developed collaboratively by the school, specialists, and parents.
- Includes specific goals, accommodations (e.g., use of manipulatives, extended time), and teaching strategies.

Placement and Monitoring

Education Environment:

- Most students with dyscalculia remain in mainstream classrooms with support.
- Resource rooms or special education services may be provided for intensive intervention.

Monitoring:

- Progress is reviewed regularly by teachers and school psychologists.
- Adjustments to the IEP are made based on student performance and feedback.

Recommendations for teachers

Teaching Methods

- Concrete-Semi Concrete-Abstract (CRA) Model:
    - *Example: When teaching addition, first work with beans (concrete), then on the number line (semi concrete), and finally with numbers (*abstract*) (Witzel, 2005).*
- **Multi-Sensory Learning:**
    - Print the numbers on sandpaper, have them trace with their fingers (Montessori method).
- **Small Steps Approach:**
    - Focus on only one concept in each lesson (e.g., only "decimals" or only "fractions").

Classroom Adaptations

- **Visual Supports:**
  - Prepare a "word wall" for mathematics terms in the classroom (e.g., "sum=+", "difference=-").
- **Time Management:**
  - Divide the questions into parts in the exams (take a break every 2 questions).
- **Error Analysis:**
  - Do not just mark the wrong answers, learn by asking why they did it wrong (for example, check the counting strategy in the 7+5=13 error).

Material Usage

- **Special Tools:**
  - Use color-coded fraction strips, number blocks, large print calculators.
- **Technology Integration:**
  - Have them use the "Mathematics Support" application (Android/iOS) recommended by the Ministry of National Education in homework.

Affective Support

- **Positive Feedback:**
  - Ask for feedback on the strategy by saying "Can you explain how you solved this problem?"
- **Anxiety Management:**
  - Have them do 2-minute breathing exercises before the exam (4-7-8 technique).

Homework

- **Short and Focused Homework:**
  - Give 5 basic questions + 1 daily life question instead of 20 questions (e.g., "Today we bought 3 products at the market, their prices are...").
- **Family Cooperation:**
  - Share a weekly "Mathematics Game" list (e.g., Car license plate collection game).

Evaluation

- **Transparent Rubrics:**
  - Share the evaluation criteria in advance (e.g., "Correct answer: 3 points, Showing the solution: 2 points").
- **Peer Support:**
  - Establish a "Mathematics Buddy" system (pair with a student without dyscalculia).

Summary

What is it?

Dyscalculia is a learning disorder characterized by persistent neurological difficulties in basic number concepts and arithmetic skills, despite normal intelligence. It is classified in DSM-5-TR as the mathematics type of Specific Learning Disorder.

Reasons:

- Strong genetic component (60% heritability)

- Structural differences in the intraparietal sulcus
- Visual-spatial processing and working memory issues

Prevalence:

- 3-7% in school-age children
- 8% of RAM applications in Turkey
- Equal distribution among genders

Main Symptoms:

- Inability to understand number magnitude
- Counting fingers in simple operations
- Inability to interpret mathematical terms
- Difficulty with time and money calculations

Diagnosis Process:

- DSM-5-TR criteria (performance below 1.5 SD)
- WISC-IV + TEMA-3 test battery
- MEB RAM evaluation process (60-90 days)

Training Strategies:

- Concrete-semi concrete-abstract teaching model
- Focusing on daily life mathematics
- Exam adaptations in IEP (extra time, etc.)

Important Warnings:

- Should not be confused with "mathematical ineptitude"
- Frequently co-occurs with dyslexia and ADHD
- Symptoms can be alleviated with early intervention

Last Note:

According to MEB 2023 data, 82% of students with dyscalculia show at least one grade level of progress in mathematics courses with appropriate educational support. Teachers' awareness plays a critical role in this process.

Attention-Deficit/Hyperactivity Disorder (ADHD)

What is it?

ADHD is a neurodevelopmental disorder in which the individual exhibits symptoms of inattention, hyperactivity, and impulsivity that are inappropriate for their age. These symptoms persist for at least 6 months and are observed in multiple settings such as home and school. Individuals with the inattentive type miss details, experience forgetfulness, and cannot be organized; in the hyperactive-impulsive type, restlessness, interrupting, and impatience are prominent. In the combined type, both symptom groups are seen together. The basis of ADHD lies in functional differences in the prefrontal cortex and basal ganglia, and irregularities in the dopamine/noradrenaline systems. This disorder, which is not related to intelligence level, is seen in approximately 5-7% of children and can continue into adulthood. Symptoms can be managed with appropriate educational support and behavioral interventions. ADHD, which is recognized by the Ministry of National Education within the scope of special needs, is supported by IEP.

What are the causes?

Genetic Factors (Strong Evidence)

- **Family studies:** The risk increases 4-8 times in first-degree relatives of children with ADHD (Faraone, 2019)
- **Specific genes:** Variations in the DAT1, DRD4, and DRD5 genes affect dopamine transmission
- **Twin studies:** 70-80% heritability rate (80% concordance in monozygotic twins)

Neurobiological Foundations

- **Brain structure:** 5-10% volume reduction in the prefrontal cortex and basal ganglia (MRI studies)
- **Neurochemical:** Irregularity in dopamine and noradrenaline systems (PET imaging)
- **Functional differences:** Abnormal activation patterns in attention networks (salience network)

Environmental Risk Factors

- **Prenatal:** Alcohol/tobacco exposure in the womb (risk increases 2.5 times)
- **Perinatal:** Low birth weight (<2500 gr), prematurity
- **Postnatal:** Lead exposure, early childhood traumas

Neurodevelopmental Processes

- Delay in the maturation of nerve networks (frontal lobe)
- Abnormal course of synaptic pruning (adolescence)
- Disorders in neurotransmitter timing

Prevalence in the world and participating countries

Prevalence Worldwide

- In children: 5-7% (APA, 2022)
    - ADHD is diagnosed in 1 out of every 20-25 school-age children
    - The diagnosis rate in boys is 2-3 times higher than in girls (however, the risk of overlooking it is high in girls)
- In adults: 2.5-4% (WHO, 2021)
    - Symptoms persist into adulthood in 60% of those diagnosed in childhood

Situation in Turkey (MoNE and TURKSTAT 2023 Data)

Age Group	Prevalence Rate	RAM Diagnosis Number
6-12 years old	%6.1	142,000+
13-18 years old	%4.3	78,000+
Adult	%1.8*	No data

Note: *Adult data are based on the psychiatry clinics of university hospitals.

Gender Differences

- **Boys:** More often diagnosed due to hyperactivity-impulsivity symptoms (8.2%)
- **Girls:** Inattentive type ADHD is more common (3.9%) and is usually noticed in adolescence

Current Trends in Turkey

- ADHD diagnosis increased by 40% between 2015-2023 (MoNE data)

Prevalence in the Netherlands

ADHD occurs in approximately 3-5% of children and young people. Diagnosis is carried out by child and adolescent psychiatrists, mental health psychologists or generalist remedial educationalists. The process involves observation, questionnaires, and interviews with parents and the school. Treatment often consists of psychoeducation, behavioral therapy and sometimes medication. The Youth Act regulates access via the local authority.

Prevalence in North Macedonia

Although there is no comprehensive national registry, estimates from clinical psychologists and education specialists suggest that ADHD affects approximately:

- 5–7% of children aged 6–12,
- 3–5% of adolescents aged 13–18,
- 1–2% of adults, primarily diagnosed in psychiatric outpatient clinics at university hospitals.

Reports from the Institute for Mental Health of Children and Adolescents – Skopje and regional mental health centers confirm a growing number of referrals due to behavioral concerns in schools, particularly in urban areas with better awareness and access to services.

Prevalence in Lithuania

- A study conducted in Lithuania found that ADHD affects approximately 5–7% of primary school children.
- Gender distribution follows global trends: boys are diagnosed more frequently than girls, with ratios ranging from 3:1 to 16:1 depending on diagnostic criteria and age group.
- ADHD is recognized as a neurodevelopmental disorder and is included in Lithuania's special educational needs (SEN) framework.

Misconceptions (Scientific Facts)

- ADHD drugs are addictive!

Fact: Long-term studies show that methylphenidate or amphetamine derivative drugs at the correct dose reduce addiction (NIH, 2022).

- Computer games cause ADHD!

Fact: There is no causal relationship. Children with ADHD turn to attention-grabbing stimuli (such as games), but games do not create ADHD (Nature Human Behaviour, 2023).

- Sugar and junk food cause ADHD!

Fact: It is a genetic and neurobiological disorder. Nutrition alone does not cause ADHD. However, refined sugar can exacerbate symptoms (JAMA Pediatrics, 2020).

- ADHD is caused by bad parenting!

Fact: Parenting style can trigger it, but it is not the cause. In other words, the family's approach can exacerbate or alleviate the symptoms.

- Those with ADHD are lazy and have low intelligence!

Fact: There is no connection between ADHD and IQ. 30% of individuals with ADHD may be highly intelligent (Barkley, 2022).

- It only occurs in children and disappears when they grow up!

Fact: It continues into adulthood in 60%. Adult ADHD manifests itself with inattentiveness and organization problems (WHO, 2023).

- ADHD diagnosis is unnecessary, it is given to every hyperactive child!

Fact: The diagnosis is made according to DSM-5-TR criteria. Comprehensive tests (WISC-IV, Conners) are applied in RAMs in Turkey.

- Medications change personality, turn you into a zombie!

Fact: Personality does not change with appropriate doses. Medications increase the quality of life by regulating impulse control (NEJM, 2021).

- ADHD is not a disease, but a result of modern life!

Fact: It has a 200-year medical history. In 1798, Scottish doctor Alexander Crichton had described similar symptoms.

- Sports/meditation completely cures ADHD!

Fact: It can be supportive, but it is not sufficient on its own. The most effective treatment: Medication + Behavioral therapy + School support (APA, 2023).

- **Special for Teachers: Students with ADHD create discipline problems in the classroom!**

Correct: It can be managed with correct classroom strategies (movement breaks, visual planners).

How to recognize ADHD

Skipping details:

- Making simple arithmetic errors in the same math problem (e.g., 5+3=7)
- Answering written exams without reading the question to the end

Focus problems:

- Not being able to stay in the same activity for more than 10 minutes
- Excessive distraction by external stimuli (sound in the corridor, movement in front of the window)

Difficulty in organization:

- Notebook/desk messy, homework incomplete or missing
- Time mismanagement (finishing 20 minutes of homework in 2 hours)

Physical mobility:

- Not being able to sit in line, shaking feet, tapping with a pen
- Getting up and walking around the classroom without permission

Impulsive reactions:

- Answering questions before they are completed
- Not being able to wait in line (rushing to the front in activities)

Excessive talking:

- Interrupting during lessons, jumping from topic to topic
- Thinking out loud or talking to oneself

Critical Differences That Distinguish ADHD from Discipline Problem

Inconsistency: Being perfect in one activity and not being able to focus at all in another within the same day

Irrelevance to intelligence: Making mistakes in simple operations while being able to solve difficult questions

Being seen in all environments: Similar behaviors not only at school but also at home/play

Diagnostic Criteria (According to DSM-5-TR)

Inattention (At least 6 from A1-A9, at least 5 for 17 years+)

- Cannot pay attention to details, makes mistakes at school/work
- Has difficulty maintaining attention (while listening to lectures, during long readings)
- Does not seem to listen when spoken to directly
- Does not follow instructions, cannot complete tasks
- Experiences task/organization problems
- Avoids tasks that require mental effort
- Loses items necessary for tasks
- Easily distracted by external stimuli
- Forgets daily activities

Hyperactivity-Impulsivity (At least 6 from B1-B9, at least 5 for 17 years+)

- Their hands/feet are constantly fidgeting or they squirm in their seat.
- Gets up in situations where sitting is expected.
- Runs/climbs inappropriately.
- Has difficulty playing/engaging in activities quietly.
- Acts as if "driven by a motor".
- Talks excessively.
- Answers questions before they have been completed.
- Has trouble waiting their turn.
- Interrupts others

Diagnostic Criteria

- Symptoms started before the age of 12
- Seen in two or more settings (home, school, work)
- To a degree that impairs functionality
- Cannot be better explained by another mental disorder

ADHD diagnosis process in the participating countries

ADHD diagnosis process in Turkey

Preliminary Assessment (School Process)

- Classroom Observation Form: The classroom teacher fills out the MoNE's "ADHD Behavior Assessment Scale" (observation for 6 months)
- Guidance Service:
    - Applies the Conners Teacher Rating Scale
    - Conducts interviews with the family
    - Gathers information from other subject teachers

Documents Required for RAM Application

- Application petition signed by the parent
- School observation report (6-month period)
- Student product file (notebook, exam paper samples)
- Behavior observation forms of other teachers

Tests Applied at RAM

- WISC-IV Intelligence Tests:
    - Attention (Working Memory Index)
    - Focus is placed on Processing Speed scores
- ADHD Battery:
    - Conners CPT (Attention Performance Test)
    - MOXO d-CPT (Visual Attention Test)
- Behavior Assessment:
    - Child Behavior Checklist (CBCL)
    - Teacher Rating Form (TRF)

Diagnosis Process

- Board Meeting: The team consisting of a psychologist, special education specialist, and child psychiatrist at RAM evaluates
- DSM-5-TR Criteria: All items are checked one by one
- Differential Diagnosis:
    - Learning disability
    - Anxiety disorders are eliminated

Reporting

- Special Education Assessment Board Report is prepared
- Duration of Support Education: Determined as 8-12 hours per week
- Referral is made for IEP (Individualized Education Program)

Monitoring

- In 3-Month Periods: IEP development report is prepared
- Annual Reassessment: Tests are repeated at RAM

Important Notes:

Duration: Diagnosis takes an average of 45-60 business days

Fee: RAM services are free of charge

Validity: Reports are valid for 1 year

ADHD diagnosis process in Croatia

Preliminary Evaluation (School Process)

- **Classroom Observation Form:** "ADHD Behavior Assessment Scale" (observation for 3 months)
- Guidance Service:
    - Conducts interviews with the family
    - Gathers information from other teachers

Documents Required for "Decision on the appropriate form of education"

- Application petition signed by the parent
- Behavior observation forms of other teachers
- Opinion from the Commission session

Tests used by psychologists, psychiatrists and educational rehabilitators:

- WISC-IV Intelligence Tests:
    - Attention (Working Memory Index)
- ADHD Battery:
    - Conners CPT (Attention Performance Test)

Diagnosis Process

- If the assessment tests show that the child has ADHD, the school medicine doctor enters this into the system.
- Differential Diagnosis:
    - Learning disability
    - Anxiety disorders

Reporting

- Individualized Education Plan (IEP):

It is made on the beginning of school year (from the beginning of the academic year).

ADHD diagnostic process in the Netherlands

- Signs are often noticed by teachers or parents, usually at primary school.
- The diagnostic examination is carried out by a child and adolescent psychiatrist, mental health psychologist or general remedial educationalist.
- The examination includes interviews with the child, parents and school, behavioral observations and questionnaires (e.g. CBCL, TRF, ADHD questionnaire).
- Comorbidity (e.g. learning disabilities or ASD) is always taken into account.

Application via SWV

- The school compiles a pupil file with observations, action plans and support needs.
- Parents and school can jointly submit an application to the appropriate educational SWV.
- Required documents: education reports, evaluations of interventions used, medical or psychological reports.

Evaluation process SWV

- The SWV assesses the need for support and whether additional support is required within or outside the school.
- Experts (e.g. remedial educationalist, behavioural scientist) advise the SWV.

Diagnosis decision

- The official diagnosis is made by a qualified diagnostician in youth mental health care.
- Parents receive treatment and support advice (e.g. psychoeducation, parent training, medication or behavioural therapy).

Placement and monitoring

- The child can receive support through appropriate education (e.g. extra guidance, quiet workplace, help with planning).
- In more serious cases, placement in special education (cluster 4) may be considered.
- Progress is monitored through evaluation meetings between the school, parents, practitioners and the SWV.

ADHD Diagnosis Process in North Macedonia

Preliminary Evaluation (School-Based Process)

Classroom Observation:

- Teachers complete the ADHD Behavior Observation Form (adapted from the DSM-5 symptom checklist), maintained over a 6-month period.
- Indicators include hyperactivity, impulsiveness, inattentiveness, and executive functioning issues**.**

School Support Team Involvement:

- The school psychologist or pedagogue collects behavioral data from subject teachers.
- The Conners Teacher Rating Scale is often used to quantify behaviors.
- Parent interviews are conducted to assess behavior in the home setting.

Required Documentation for External Referral

- Parent-signed formal application for multidisciplinary assessment
- School-prepared observation report covering at least 6 months
- Behavioral records from teachers and product samples (notebooks, worksheets)
- Developmental and medical history form filled out by parents
- Consent for psycho-diagnostic testing

Diagnostic Testing at Specialized Centers

Conducted at Centers for Educational-Psychological Services or Institute for Mental Health of Children and Adolescents.

Cognitive Evaluation:

- WISC-IV or similar IQ assessments, focusing on:
- Working Memory Index (WMI)
- Processing Speed Index (PSI)
- Attention and Impulse Control Tests:
- Conners Continuous Performance Test (CPT)
- MOXO d-CPT or equivalent digital attention battery (if available)

Behavioral Rating Scales:

- Child Behavior Checklist (CBCL) completed by parents
- Teacher Report Form (TRF) completed by school

Diagnosis and Decision-Making Process

A formal diagnostic board meets, including Psychologist, Special educator, Child psychiatrist (where available) Parent(s)

- DSM**-5** Diagnostic Criteria are reviewed symptom-by-symptom.

- A differential diagnosis is conducted to rule out:
    - Specific learning disorders
    - Anxiety and mood disorders
    - Environmental and behavioral causes
- Upon confirmation, the diagnosis is recorded as “Neurodevelopmental Disorder – ADHD”, specifying the subtype (Inattentive, Hyperactive-Impulsive, or Combined).

Support Plan and IEP Implementation

- A Special Needs Assessment Report is issued.
- The school support team creates an Individualized Education Plan (IEP) within 30–45 days, including:
    - Behavioral interventions
    - Seating arrangements, breaks during tasks
    - Visual schedules, shortened tasks, and extended time for exams
- Students typically receive 8–12 hours per week of support services, either within the classroom or through individual pull-out sessions.

Monitoring and Reassessment

- Progress is monitored quarterly by the school team.
- An updated IEP Progress Report is prepared every 3 months.
- Annual reassessment is conducted by external specialists to evaluate the need for continued support or adjustment of accommodations.

Important Notes:

- **Duration:** 45–60 calendar days from school referral to finalized diagnosis
- **Fee:** All public assessments and interventions are free of charge
- **Validity:** Reports and support plans are valid for 1 academic year
- **Appeals:** Families may request a second evaluation from psychiatric clinics at medical faculties or private centers

ADHD diagnosis process in Lithuania

1. Preliminary Screening and Referral

- **Classroom Observation:** Teachers observe students for signs of inattention, impulsivity, and hyperactivity. Persistent behavioral concerns trigger referral to school specialists.
- **School Counseling Service:** School psychologists or pedagogical-psychological services (PPS) conduct initial interviews and behavioral assessments. They may involve parents and teachers to gather multi-setting observations.

Application and Documents

Required Documents:

- Referral from a teacher or school psychologist.
- Parental consent.
- Academic records and behavioral reports.

- Medical history and developmental milestones.

Evaluation Process

Tests and Applications:

- ADHD-specific rating scales (e.g., Conners Rating Scale, Vanderbilt Assessment).
- Interviews with parents, teachers, and the child.
- Screening for co-occurring conditions (e.g., anxiety, learning disorders).

Special Education Assessment Board:

- A multidisciplinary team reviews all data.
- May include psychologists, special educators, and pediatricians.
- Additional referrals may be made for neurological or psychiatric evaluation.

Diagnosis Decision and IEP Preparation

Criteria:

- Symptoms must persist for at least 6 months.
- Must be present in two or more settings (e.g., home and school).
- Must significantly impair academic, social, or emotional functioning.

Individualized Education Plan (IEP):

- Tailored to the child's needs.
- Includes behavioral strategies, classroom accommodations, and sometimes medication management.
- Developed collaboratively with parents, teachers, and specialists.

Placement and Monitoring

Education Environment:

- Most children with ADHD remain in mainstream classrooms.
- May receive support from special educators or attend resource rooms.

Monitoring:

- Regular follow-ups by school psychologists and teachers.
- IEPs are reviewed and updated based on progress.
- Medication, if prescribed, is monitored by healthcare providers.

Recommendations for teachers

Techniques to Increase Attention

- Use a Visual Timer
    - Colored clock/hourglass showing the lesson duration (e.g., "5-minute break when the red area is finished")
- Physical Positioning
    - Seat them close to the teacher's desk instead of distracting places such as by the window

- Break Down Instructions
    - Instead of "Open your notebook, solve the 3rd problem on page 35":
    - "Open your notebook" (wait)
    - "Find page 35" (check)
    - "Mark the 3rd question"

Hyperactivity Management

- Provide Movement Breaks
    - 2-minute stretching exercises or water breaks every 20 minutes
- Alternative Seating Arrangements
    - Standing desk
    - Sitting on a balance cushion
- Silent Fidget Tools
    - Allow the use of a stress ball, textured eraser, or bendable ruler

Impulsivity Control

- "5 Second Rule"
    - Count 5 seconds for an answer after asking a question, "I listen to the one who raises their hand first"
- Behavior Chart
    - Visual reminder to be pasted on the desk:
    - 👂 Listen → ✋ Wait → 💭 Think → 🗣️ Speak

Teaching Methods

- Multi-Sensory Learning
    - Mathematics: Counting numbers with beads
    - Turkish: Letter printing in the sand
- Color Coding

To the edges of the notebook:

🔴 Important information

🔵 Homework

🟢 Free study

Assessment Adaptations

- Exam Modifications
    - Dividing questions into separate pages
    - Offering an alternative oral exam
- Visual Planner
    - Weekly homework tracking chart (completing with ✔️)

Positive Support

- Instant Feedback
    - Specific feedback such as "You are very well focused right now!"

- Point System
    - 5 correct behaviors = 10 minutes of selected activity (determine together with the student)

In-Class Collaboration

- Peer Coaching
    - Pair the student with ADHD with an organized friend

Summary

What is it?

ADHD is a neurodevelopmental disorder characterized by symptoms of inattention, hyperactivity, and impulsivity. According to DSM-5-TR diagnostic criteria, it must last for at least 6 months and impair academic/social functioning.

In-Class Symptoms

Inattention: Skipping details, forgetfulness, organization problem

Hyperactivity: Inability to stay still, constant movement

Impulsivity: Interrupting, inability to wait one's turn

Teacher Strategies (Top 5 Items)

- Give short and clear instructions (like "Put down the pen, open your notebook")
- Allow movement breaks (2 minutes of stretching every 20 minutes)
- Use a visual planner (Homework tracking with colored labels)
- Give instant feedback (You are very well focused in this lesson!)

Things to Remember

- ADHD is not a personality trait, but a biologically based difference
- Early intervention increases academic success by 40% (MEB, 2023)
- Students with ADHD have strong points such as creativity and energy

Golden Advice to the Teacher:

"These students learn differently, not unable to learn. You can unlock their potential with the right strategies."

Intellectual Disability

What is it?

Intellectual disability is a developmental difference in which an individual experiences significant difficulties in learning, problem-solving, reasoning, and adaptive skills compared to their peers. This condition affects the child's daily life activities such as communication, self-care, social interaction, and academic skills. The degrees of intellectual disability (mild, moderate, severe) vary according to the individual's independent living skills and learning capacity. In the school environment, students with mild and moderate levels, which are the most common, can learn basic academic skills and establish social relationships. These students understand concrete concepts better, learn with long-term repetitions, and benefit from step-by-step educational methods. Intellectual disability can be caused by various factors before, during, or after birth. It is possible to improve the potential of these students with early diagnosis and individualized education programs.

What are the causes?

Genetic Factors

- **Down Syndrome (Trisomy 21):** The most common genetic cause of mild-moderate intellectual disability (1 in every 800 births in Turkey)
- **Fragile X Syndrome:** FMR1 gene mutation on the X chromosome, associated with learning difficulties and behavioral problems
- **Other:** Metabolic diseases such as Phenylketonuria (PKU) (can be detected by newborn screening)

Prenatal Factors

- **Infections during pregnancy:** Rubella, CMV, toxoplasma
- **Substance use:** Alcohol (Fetal Alcohol Syndrome), smoking, drugs
- **Nutritional deficiency:** Iodine deficiency, folic acid deficiency

Birth and Environmental Factors

- **Birth complications:** Oxygen deprivation (asphyxia), premature birth (<32 weeks)
- **Childhood period:** Severe malnutrition, lead exposure, head traumas
- **Socioeconomic factors:** Lack of stimulation, cycle of lack of education

Prevalence in the world and participating countries

Global

- Mild-Moderate intellectual disability: 1-3% of the population (WHO, 2023)
- Down Syndrome: 1.1 in every 1000 births (Global Down Syndrome Foundation)

Regional Distribution:

- 2-4 times higher in developing countries (due to inadequate health services and nutritional problems)
- 1.2% in school-age children in the USA (CDC, 2022)
- Between 0.8-1.5% in EU countries

Situation in Turkey (MoNE and TURKSTAT 2023 Data)

Criterion	Mild IQ (IQ 50-70)	Orta ZE (IQ 35-49)
General Prevalence	%1.2	%0.4
In Inclusive Education	78,000+ students	12,000+ students
Gender Distribution	1.5 times more in males	Equal

Remarkable Data:

- **Effect of Consanguineous Marriage:** Shows a 3-fold increase in regions with a high rate of consanguineous marriage (Hacettepe Univ. Research, 2022)

Situation in Educational Institutions

- **Within MoNE Inclusive Students:**
    - Intellectually disabled students constitute the largest group with 35%

Prevalence in the Netherlands

Approximately 2% of the Dutch population has a mild intellectual disability (IQ 50–70). Diagnosis is made using intelligence tests (e.g. WISC-V) and adaptive skills lists. The procedure is carried out by remedial educationalists/psychologists, often in collaboration with schools and youth care services. Appropriate education and care can be provided under the Long-Term Care Act or the Youth Act.

Prevalence in North Macedonia

Official national statistics on intellectual disability (ID) are limited, but estimates from the Institute for Mental Health of Children and Adolescents – Skopje, regional diagnostic centers, and inclusive education units indicate the following:

Criterion	Mild ID (IQ 50–70)	Moderate ID (IQ 35–49)
Estimated Prevalence	~1.0–1.2%	~0.3–0.5%
Participation in Inclusive Education	6,500+ students	900+ students
Gender Distribution	1.4–1.6 times more common in males	Close to equal

Prevalence in Lithuania

- According to the State Data Agency, children with intellectual disabilities are included under the broader category of children with special educational needs (SEN). In 2023, there were approximately 15,000 children with disabilities in Lithuania.
- While exact numbers by gender for intellectual disability are not publicly disaggregated, general trends indicate that boys are more frequently identified with intellectual disabilities than girls, consistent with international data.

Misconceptions (Scientific Facts)

- Intellectual disability is the family's fault (overprotection/spoiling).

Fact: It is a biologically based condition. Parental attitudes only affect the support process.

- Children with mild intellectual disabilities 'cannot learn'.

Fact: They only learn more slowly and in concrete ways.

- Children with intellectual disabilities are always happy.

Fact: They experience all emotions like other children. They may show reactions such as anger, sadness, and anxiety.

- They cannot be educated, they only need care

Fact: With MoNE's inclusion programs: 68% learn basic reading and writing, 45% acquire simple vocational skills

- They are always aggressive.

Fact: Aggression is the result of not being able to communicate. There is no scientific data showing that they are more aggressive than other children.

- They should be sent to private schools, they harm normal classes.

Fact: Inclusion education improves the social skills of all students. Children with mild to moderate intellectual disabilities can receive inclusion education.

- Intellectual disability can be treated with medication.

Fact: Medications are only used for accompanying conditions such as ADHD/depression.

- Down syndrome = Severe intellectual disability

Fact: 40% of people with Down syndrome are mild-moderate and adapt to inclusion.

- It goes away when they grow up.

Fact: It is a lifelong condition, but functionality increases with early intervention.

How to recognize intellectual disability

Observations in Academic Skills

- Learning Speed:
    - Learns 2-3 times slower than their peers (for example, learning letters may take 1 year)
    - Cannot grasp without concrete examples (has difficulty understanding the number "5" instead of "5 apples")
- Memory Characteristics:
    - Short-term memory is weak (forgets a 3-step instruction)
    - Learns topics requiring memorization (multiplication table, poem) with great difficulty

Social-Emotional Symptoms

- Reading Social Cues:
    - Cannot "generalize" classroom rules (may run during recess but cannot reconcile that they should not run in the classroom)
    - Has difficulty understanding humor and metaphors
- Emotion Regulation:
    - Overreaction to small frustrations (crying fit when a pencil breaks)
    - Has difficulty waiting in line, is impatient

Language and Communication Characteristics

- Speech Development:
    - Forms simple sentences (like "Give water")
    - Does not understand abstract concepts (justice, freedom)
- Nonverbal Communication:
    - Has difficulty reading gestures-facial expressions (cannot interpret the teacher's frown as "anger")

Clues in Daily Skills

- Organization:
    - Cannot keep their bag tidy, often loses their belongings
    - Has difficulty learning the time (analog clock)
- Fine Motor Skills:
    - Has illegible handwriting, has difficulty using scissors
    - Is behind their age in skills such as buttoning and tying shoes

Practical Checklist for Teachers

- Distinctive Features:
    - Difference from learning disability: A general delay in all areas (academic-social)
    - Difference from ADHD: Limitation in basic learning capacity rather than attention problems

Diagnostic criteria (According to DSM-5-TR)

Basic Criteria

1. **Significant Limitation in Intellectual Functioning**

    - IQ 70 and below (performance below ≥2 standard deviations in tests)
    - **Approved tests:** WISC-V, Stanford-Binet

2. **Adaptive Skill Deficits**

    - **Conceptual Domain:** Reading-writing, mathematics, reasoning
    - **Social Domain:** Empathy, communication, making friends
    - **Practical Domain:** Self-care, using money, following routines

3. **Onset During the Developmental Period**

    - Symptoms appearing in childhood/adolescence

Severity Rating (Mild-Moderate Level)

Degree	IQ Range	Adaptive Skills
Mild	50-70	Can learn simple academic/social skills
Moderate	35-49	Can manage daily living skills with intensive support

For Differential Diagnosis

- **Learning Disabilities:** Limitation only in the academic area
- **Autism:** Additional difficulties in social communication
- **ADHD:** Attention problems in the foreground

Intellectual disability diagnosis process in the participating countries

Intellectual disability diagnosis process in Turkey

Preliminary Assessment (School Process)

- Classroom Teacher Observation:
    - Fills out the Ministry of Education's "Developmental Assessment Form" for 6 months
    - Academic backwardness (being 2+ years behind peers in reading-writing, mathematics)
    - Social-adaptive skill deficiencies are noted
- Guidance Service:
    - Portage Early Childhood Scale (3-6 years old)
    - Gazi Early Childhood Assessment Tool (7-12 years old)

Documents Required for RAM Application

- Parental Consent Form (in MEB format)
- School Observation Report (with 6-month data)
- Student Product File (notebook, exam paper samples)
- Health Board Report (if available)

Evaluations Made at RAM

- Intelligence Tests:
    - WISC-IV (6-16 years old) → Focus is on Working Memory and Processing Speed scores
    - Stanford-Binet (2 years+)
- Adaptive Behavior Assessment:
    - Vineland Adaptive Behavior Scale
    - Ankara Developmental Screening Inventory (AGTE)
- Additional Tests:
    - Peabody Picture-Vocabulary Test (language development)
    - Bender-Gestalt Visual Motor Test

Diagnosis Process

- RAM Board Meeting:
    - Child Psychiatrist (if available)
    - Special Education Expert
    - Psychologist
    - Parent
- Decision Stage:
    - DSM-5-TR criteria are checked
    - Educational Diagnosis is made ("Mild/Moderate Intellectual Disability")

Report and Referral

- Special Education Assessment Board Report is prepared
- Duration of Support Training:
    - Mild ID: 6 hours per week
    - Moderate ID: 10 hours per week
- Placement Decision:
    - Inclusion education
    - Special education class (if intensive support is required)

Monitoring and Re-Evaluation

- **3-Month Follow-up:** IEP development report
- **Annual Evaluation:** Tests are renewed at RAM
- **Report Validity:** 1 year (then re-evaluation)

Intellectual disability diagnosis process in Croatia

Preliminary Evaluation (School Process)

- Classroom Teacher Observation:
    - Socio-adaptive skill deficiencies are recorded
- Guidance Service:
    - Portage Early Childhood Scale (3-6 years old)
    - Gazi Early Childhood Assessment Tool (7-12 years old)

Documents Required for ‘’Decision on the appropriate form of education’’

    - Parental Consent Form 3. Assessments Conducted at RAM
    - Opinion and findings of psychologists, psychiatrists and educational rehabilitators.
- Intelligence Tests:
    - WISC-IV (6-16 years old) → Focus is placed on Working Memory and Processing Speed scores
    - Stanford-Binet (2 years old+)
- Adaptive Behavior Assessment:
    - AAMD SCALE
- Additional Tests:
    - Peabody Picture-Word Test (language development)
    - Bender-Gestalt Visual Motor Perception Test

Diagnosis Process

- When we receive the results of the WISC assessment, the doctor gives a diagnosis of intellectual disabilities.

Support:

- Adopting a Decision on the appropriate form of education
- Schooling according to a special program (if there are borderline and mild intellectual difficulties, the child can be educated in a regular school but according to a special program). If there are severe and severe intellectual difficulties, then the child goes to special institutions or occupational centers.

Intellectual disabilities diagnostic process in the Netherlands

- Identification usually takes place at school or at the health clinic.
- Diagnostics consists of an intelligence test (e.g. WISC-V) combined with observations and questionnaires on adaptive skills (such as Vineland).
- The assessment is carried out by a remedial educationalist or psychologist.

Application via SWV

- The school compiles a pupil file with learning results, action plans and evaluations.
- The school and parents can jointly submit a support application to the appropriate educational SWV.
- Documents: test results, observation data, education plans, evaluation reports.

Evaluation process SWV

- The SWV assesses the need for support and advises whether additional arrangements are necessary.
- An expert (remedial educationalist, behavioral scientist) is involved in this process.

Diagnosis decision

- The diagnosis decision is made by a qualified psychologist or remedial educationalist.
- Parents receive a report with the diagnosis and advice on appropriate education or care.

Placement and monitoring

- Depending on the severity, the child may remain in mainstream education with extra support, or transfer to special (primary) education or special secondary education (cluster 3).

Progress is monitored through action plans and periodic evaluations between the school, parents and the SWV.

Intellectual disability diagnosis process in North Macedonia

Preliminary Evaluation (School-Based Process)

Teacher Observation and School Screening:

Class teachers document concerns over at least 6 months, focusing on:

- Significant delays in reading, writing, and mathematics
- Difficulties in adaptive behavior (self-care, communication, social skills)

- Teachers use the School Observation Form for Developmental Difficulties, adapted from WHO and DSM guidelines.

School Support Team Involvement:

- The school psychologist or pedagogue conducts informal developmental assessments.
- For young children (ages 3–7), tools like the Portage Guide or Early Developmental Inventory may be used.

Required Documentation for External Evaluation

- Signed Parental Consent Form
- Teacher and Pedagogue Joint Observation Report (minimum 6 months of records)
- Student Product File (samples of schoolwork, test results)
- Medical/developmental history reports or disability reports (if any)
- Copy of student's and parent's identification documents

Multidisciplinary Assessment at Specialized Centers

Evaluations are conducted at:

- State Hospital in Skopje
- Regional Centers for Educational Support
- Institute for Mental Health of Children and Adolescents
- Clinical Center Departments of Child Psychiatry

Intelligence Assessment:

- WISC-IV or Stanford-Binet are commonly used depending on age
- Focus is on Verbal IQ, Working Memory, and Processing Speed

Direct observation of functional behaviors in daily settings

Supplementary Tests:

- Peabody Picture Vocabulary Test for language development
- Bender-Gestalt Visual-Motor Test for cognitive processing

Diagnosis and Decision-Making Process

- A diagnostic board convenes, including: Psychologist, Special educator, Child psychiatrist (if available) and Parent(s)
- Evaluation follows DSM-5 or ICD-11 criteria, with focus on: Confirmed IQ range, Measurable deficits in adaptive functioning and Onset of symptoms before the age of 18
- An educational diagnosis is issued as: Mild Intellectual Disability (MID) and Moderate Intellectual Disability (MoID)

Reporting and Educational Placement

A Special Education Diagnosis Report is prepared, which includes recommendations for educational support.

Support Training Duration (per week):

- Mild ID: 6 hours (in or outside class)
- Moderate ID: 10 hours (often pull-out or in special classes)

Placement Options:

- Inclusive education (with special educator support)
- Special education classrooms (within mainstream schools)
- In more severe cases, referral to Day Centers for Children with Developmental Disabilities

Monitoring and Reevaluation

- IEP Progress Reports are prepared every 3 months by the school support team.
- Annual re-evaluation is conducted at the original diagnostic center.
- Diagnostic reports are valid for 1 academic year and must be updated to continue support services.

Intellectual disability diagnosis process in Lithuania

Preliminary Screening and Referral

- **Classroom Observation:** Teachers observe students for persistent difficulties in reasoning, problem-solving, and adaptive behavior. If concerns arise, they initiate a referral.
- **School Counseling Service:** The school's pedagogical-psychological service (PPS) conducts initial assessments and consultations with parents and teachers. If intellectual disability is suspected, a formal evaluation is recommended.

Application and Documents

Required Documents:

- Referral from a teacher or school psychologist.
- Parental consent.
- Academic records and developmental history.
- Medical documentation if available.

Evaluation Process

Tests and Applications:

- Standardized IQ tests (e.g., WISC, Stanford-Binet) and adaptive behavior assessments are used.
- Tools like WHODAS 2.0 and Lithuania's Activity and Ability Questionnaire (A&AQ) are applied to assess functioning.

Special Education Assessment Board:

- A multidisciplinary team (psychologists, special educators, social workers) reviews the results.
- The team determines the level of intellectual functioning and adaptive behavior limitations.

Diagnosis Decision and IEP Preparation

Criteria:

- Significantly below-average intellectual functioning (IQ < 70).
- Deficits in adaptive behavior.
- Onset during the developmental period (before age 18).

Individualized Education Plan (IEP):

- Developed by the school in collaboration with specialists and parents.
- Includes tailored educational goals, support services, and accommodations.

Placement and Monitoring

Education Environment:

- Students may be integrated into mainstream classrooms with support or placed in special education settings depending on severity.
- Specialized schools or classes are available for students with moderate to severe intellectual disabilities.

Monitoring:

- Regular reviews of the IEP and student progress.
- Adjustments are made based on developmental changes and educational outcomes.

Recommendations for teachers

Teaching Methods

- Concretization Technique:
  - Mathematics: Number concept with beans-beads
  - Turkish: Teaching words with object cards (apple picture + "apple" writing)
- Small Steps Approach
  - Dividing skills into stages (e.g. holding a pencil → drawing a line → writing a letter)
  - Immediate feedback at each step ("That line is very nice!")
- Multiple Repetition:
  - Reinforcing what has been learned with daily 5-minute repetitions
  - Working on the same concept with different activities (writing, painting, saying)

Classroom Arrangements

- Visual Schedule:
  - Show the daily flow with picture cards (first mathematics → then drawing)
  - Marking completed tasks with ✔
- Physical Arrangement:
  - Seating in the front row (away from distractions)
  - Offering a standing desk option
- Material Adaptations:
  - Using thick-tipped pens, colored papers
  - Tearing activities instead of scissors (if there is fine motor difficulty)

Behavior Management

- Clear and Concise Instructions:
  - Instead of "Open your notebook, find page 20":
    - "Open your notebook" (wait)
    - "Find the page that says 20"
- Positive Reinforcement:
  - Immediate reward: Sticker, hug, verbal reinforcer ("Well done, you sat very nicely!")
  - Points chart: 5 smiley faces → Extra play time

- Warning for Transitions:
    - Announce activity changes 5 minutes in advance ("We're going to recess in 5 minutes")

Social Skills Supports

- Peer Coaching:
    - Pair with a role model student from the class (to guide at meals, during play)
- Social Stories:
    - Preparing booklets illustrating everyday situations (waiting in line, greeting)
- Group Activities:
    - Involve in group with simple tasks (painting, distributing materials)

Summary

Definition (DSM-5-TR)

- IQ ≤70 + limitations in adaptive skills
- Starts during the developmental period
- Mild-Moderate mainstreaming students:
    - Can learn basic academic skills (reading-writing, simple mathematics)
    - Acquires social rules through modeling

Classroom Observation Tips

- Academic: Being 2+ years behind peers
- Social: Difficulty understanding simple game rules
- Daily: Deficiencies in skills such as the concept of time, using money

Effective Teaching Strategies

- Concrete instruction: Mathematics with objects, reading with picture cards
- Small steps: Breaking down skills into parts (holding a pencil → drawing a line)
- Multiple repetition: Short 5-minute daily repetitions
- Visual support: Illustrated schedules, colorful materials

Behavior Management

- Clear instructions: "Put down the pen" → "Open your notebook"
- Immediate reward: Sticker, verbal praise ("Well done, you sat very nicely!")
- Social stories: Teaching rules such as waiting in line, greeting

Golden Advice to the Teacher:

These students learn differently, not incapable of learning. You can support their development with patience and the right methods.

Autism Spectrum Disorder (ASD)

What Is It?

Autism spectrum disorder is a neurodevelopmental difference characterized by difficulties in social communication and restricted/repetitive behaviors. According to DSM-5-TR, symptoms begin in early childhood and persist throughout life. Difficulties in social interaction such as avoiding eye contact and being unable to establish peer relationships are fundamental characteristics. Limited areas of interest (such as train schedules, numbers) and excessive reaction to routine changes are common. Delay in language development or unusual usage (echolalia, pronoun confusion) is typical. Sensory sensitivities (excessive reaction to loud sounds, avoidance of certain textures) may be present. Individuals with mild-moderate levels can adapt to inclusive education and acquire academic skills with individualized support. ASD is not directly related to intelligence level; it can be seen with superior abilities in some individuals.

What are the Causes?

Genetic Factors (Scientific Consensus)

- 80-90% heritable-based (Tick et al., 2016)
- Specific genes: SHANK3, CHD8 (affects nerve connections)
- Family history: If a sibling has autism, the risk increases 20 times

Differences in Brain Structure

- Functional differences in the mirror neuron system (affects empathy and imitation skills)
- Atypical organization in brain connections (frontal-limbic system)
- Neurotransmitter imbalances: Abnormalities in serotonin and GABA levels

Environmental Risk Factors

- Prenatal:
    - Maternal age (35+), infections during pregnancy (rubella)
    - Use of antiepileptic drugs (valproic acid)
- Postnatal:
    - Very low birth weight (<1500 gr)
    - Oxygen-free birth (asphyxia)

D. Misconceived Reasons (Scientific Invalidity)

- Vaccines: Relationship rejected by extensive studies (WHO, 2021).
- Parental attitudes: "Cold mother" theory refuted.
- Food additives: No evidence.

Prevalence in the world and participating countries

Situation Worldwide

According to recent research, autism spectrum disorder is seen in 1 in every 54 children in the world (CDC, 2023). This rate has increased 4 times in the last 20 years, but most of the increase is due to increased awareness and expansion of diagnostic criteria. It is diagnosed 4 times more frequently in boys than in girls. Individuals with mild-moderate levels constitute approximately 70% of the autistic population.

Prevalence in Turkey

According to official data in Turkey, the incidence of autism was announced as 1 in every 68 children (MEB, 2023).

Regional Differences:

- Diagnosis rates are higher in big cities such as Istanbul, Ankara, and Izmir (due to access to healthcare services).
- The number of children diagnosed is lower in Eastern and Southeastern Anatolia, but it is thought that the actual prevalence is higher in these regions due to the high rate of consanguineous marriage.

Situation in the Education System:

- The rate of children diagnosed with autism among inclusive students is 15%
- This rate is 35% in special education centers

Important Note:

The increase in the incidence of autism is largely related to the development of early diagnosis opportunities and better detection of mild symptoms. There is no definite evidence that the rate of autism has actually increased.

Prevalence in the Netherlands

ASD is diagnosed in approximately 1-2% of children. Diagnosis takes place at specialist centers or by child and adolescent psychiatrists, using multidisciplinary assessment (observation, interviews, questionnaires such as ADOS/ADI-R). Education and care are coordinated through SWVs and often through the Youth Act.

Prevalence in North Macedonia

Although there is no official nationwide prevalence study, health professionals and special education experts estimate that 1 in every 70–100 children in North Macedonia may show signs of Autism Spectrum Disorder. This is consistent with global data and reflects a gradual increase in early childhood referrals to developmental clinics, particularly in urban areas such as Skopje, Bitola, and Tetovo. The Institute for Mental Health of Children and Adolescents – Skopje and Centers for Early Childhood Development report a growing number of assessments each year.

Prevalence in Lithuania

- A nationwide study in Lithuania found that the prevalence of ASD among children aged 7–17 is approximately 1.4%, based on population studies.
- The gender ratio in Lithuania aligns with European trends, showing a male-to-female ratio of approximately 3.5:1, meaning boys are diagnosed significantly more often than girls.
- These figures reflect increasing awareness and improved diagnostic practices, though underdiagnosis - especially among girls - remains a concern.

Misconceptions (Scientific Facts)

- Autistic children never make eye contact.

Fact: Some can make eye contact, but this can be uncomfortable for them. They can communicate with other methods (head movements, gestures) instead of eye contact.

- Autism is caused by bad parenting.

Fact: The "refrigerator mother" theory, disproven in the 1960s, is a myth with no scientific basis. Autism is a neurodevelopmental difference and is not related to parental behavior.

- All individuals with autism are geniuses.

Fact: Only 10% have savant syndrome (superior talent). Most have average intelligence, and some may have learning difficulties.

- Vaccines cause autism.

Fact: Research conducted for over 20 years has disproven the vaccine-autism link. Andrew Wakefield's study, which made this claim, was retracted due to fraud.

- Autism goes away when you grow up.

Fact: It is a lifelong difference, but early intervention can alleviate symptoms. Adults with autism can establish independent living with support.

- Children with autism do not show affection.

Fact: They have emotions but express them differently (such as sitting next to someone instead of hugging). Many children with autism form bonds in their own unique ways.

- Children with autism cannot speak.

Fact: 40% speak, while some use alternative communication (picture cards, sign language). 80% of non-speaking children can communicate with the help of writing or technology.

- Children with autism cannot learn.

Fact: They just learn differently (with visual, concrete, repetitive methods). They can acquire academic skills with the right education.

- Autism is a disease and should be treated.

Fact: It is not a disease but is evaluated within the scope of neurodiversity (different brain structure). Support is not "treatment" but is for improving the quality of life.

- All children with autism are the same.

Fact: Since it is a spectrum, each individual's characteristics are different. Some are social, some are introverted; some speak, some do not.

- Special Situations for Teachers:
    - Harms other children in the classroom!
    - → Correct: Aggression is the result of an inability to communicate. It decreases with the right support.
    - Should go to a special school, mainstreaming does not work!
    - → Correct: Mainstreaming is beneficial for both autistic and typically developing children.

How to recognize ASD

Observations in Social Communication

- Limited eye contact
    - Averts eyes or focuses on objects while speaking
    - *Example: Looking out the window when the teacher asks a question*
- Has difficulty establishing peer relationships
    - Does not understand the rules in games or prefers to play alone
    - *Example: Refusing to be "it" in hide-and-seek**
- Misses social cues
    - Does not notice that a friend is upset
    - *Example: Asking a crying child, "Why are you yelling?"*

Repetitive Behaviors

- Stereotypies (Obsessive movements)
    - Rocking, hand clapping, walking on tiptoes
    - *Example: Flapping arms like wings in times of stress*
- Excessive adherence to routines
    - Becomes restless when the lesson schedule changes
    - *Example: Crying fit when physical education class is canceled*
- Intense areas of interest
    - Is obsessed with topics such as train schedules, dinosaurs, numbers
    - *Example: Bringing all conversations to metro lines*

Sensory Differences

- Extreme sensitivities
    - Severe reaction to loud noises (bell, applause)
    - *Example: Plugging ears to block out corridor noise*
- Tactile rejection
    - Does not want to touch materials such as paint, glue, sand
    - *Example: Avoiding finger paint activity**

Language and Communication Characteristics

- Differences in speech
    - Echolalia (repeating what is heard): Answering the question "Did you do your homework?" by saying "Did you do your homework?"
    - Pronoun confusion: Saying "I be quiet" instead of "You be quiet"
- Understands concrete expressions
    - Cannot interpret metaphors: Trying to actually open their eyes wide when told to "Keep your eyes peeled"

ASD diagnostic criteria (According to DSM-5-TR)

Persistent Deficits in Social Communication and Interaction

- Impairment in social-emotional reciprocity
    - Inability to initiate/sustain normal conversation
    - Marked lack of sharing interests/emotions
- Impairment in nonverbal communication
    - Abnormalities in eye contact, body language, and facial expressions

    - Lack of gesture use
- Difficulty forming and maintaining relationships
    - Inability to form appropriate relationships with peers
    - Inadequacy in playing pretend games

Restricted/Repetitive Patterns of Behavior

- Stereotypical movements
    - Hand flapping, rocking, walking on tiptoes
- Excessive adherence to routines
    - Extreme reaction to small changes
    - Rigid thought patterns
- Intense/exaggerated interests
    - Excessive attachment to unusual objects
- Sensory over/under-responsiveness
    - Hypersensitivity to sounds, touch, tastes

Additional Requirements for Diagnosis

- Onset of symptoms in early childhood
- Clinical level impairment in social/functional areas
- hese symptoms are not better explained by intellectual disability or developmental delay

Severity Level (DSM-5-TR):

- **Level 1 (Mild):** Difficulty in social communication without support
- **Level 2 (Moderate):** Obvious deficiencies requiring significant support
- **Level 3 (Severe):** Need for very serious support

ASD diagnosis process in the participating countries

ASD diagnosis process in Turkey

Preliminary Assessment (School/Guidance)

- **Class Observation Form:** The teacher fills out the Ministry of Education's "Autism Behavior Checklist" for 3 months
- **Family Interview:** Developmental milestones (speech, eye contact, play) are questioned

Documents for RAM Application

- Parent application petition (in Ministry of Education format)
- School observation report (at least 3 months of data)
- Developmental history (from pregnancy onwards)
- Previous reports, if any

Tests Applied at RAM

- M-CHAT-R/F (screening for children aged 16-30 months)
- CARS-2 (Childhood Autism Rating Scale)

- WISC-IV (6-16 age intelligence assessment)
- Vineland Adaptive Behavior Scale (daily living skills)

Diagnosis Process

- Child Psychiatrist approval is mandatory
- DSM-5-TR criteria are fully checked
- Accompanying conditions (ADHD, learning disability) are investigated

Report and Referral

- Special Education Assessment Board Report is prepared
- Support Training Period:
    - Mild autism: 8 hours per week
    - Moderate autism: 12 hours per week
- Placement Decision:
    - Inclusion education
    - Special education class (if needed)

Monitoring

- IEP evaluation meeting every 3 months
- Annual re-evaluation (tests are repeated at the MRC)

Important Information:

⌛ Duration: Diagnosis takes 45-60 business days.

💡 Fee: MRC services are free of charge.

📌 Objection: If the parent objects to the report, a report can be obtained from the university hospital.

ASD diagnosis process in Croatia

Preliminary Evaluation (School/Guidance)

- **Class Observation Form:** The school teacher/kindergarten aunt informs the professional service that he sees some changes in behavior. After that, the child goes to a team assessment with a speech therapist, an educational rehabilitator and a psychologist.
- **Family Interview:** Developmental stages (speech, eye contact, play) are questioned.

Documents for Decision on the appropriate form of education

- Parental support
- Developmental history (from pregnancy onwards)
- Previous reports, if any

Tests that the expert use:

- ADOS
- WISC-IV
- Vineland Adaptive Behavior Scale (daily living skills)

Diagnosis Process

- Child Psychiatrist approval is mandatory
- Accompanying conditions (ADHD, learning disability) are investigated

Report and Support

After the child receives a diagnosis, the school's expert committee submits the documentation for the Decision on the appropriate form of education. When we receive a Decision on the appropriate form of schooling (depending on the degree of autism, which is divided into four categories in Croatia), then we know whether the child will attend a regular class, a special class or a special educational group.

ASD diagnostic process in the Netherlands

- Signs are often noticed at a young age by parents, school or the health clinic.
- Diagnosis takes place in youth mental health care or specialized centers.
- The examination is multidisciplinary and includes observations, parent and child interviews and standardized instruments (e.g. ADOS, ADI-R).
- Competent professionals: child and adolescent psychiatrist, mental health psychologist or general remedial educationalist.

Application via SWV

- The school compiles a pupil file containing observations, action plans and evaluations.
- Parents and school submit a support application to the appropriate education SWV.
- **Documents:** behavioural observations, educational results, medical or psychological reports.

SWV evaluation process

- The SWV assesses the educational and support needs.
- Experts (remedial educationalist, behavioural scientist, sometimes an autism specialist) provide advice.

Diagnosis decision

- The official diagnosis is made by a qualified diagnostician in youth mental health care.
- Parents receive a report with the diagnosis and treatment or support advice.

Placement and monitoring

- Pupils can remain in mainstream education with extra guidance (e.g. a support arrangement or teaching assistant).
- If more intensive support is required, placement in special education (cluster 4) may be necessary.

Monitoring takes place via development perspective plans (OPP), evaluations between the school, parents, practitioners and the SWV.

ASD diagnosis process in North Macedonia

Preliminary Evaluation (School or Preschool Level)

Observation Period:

- The class or kindergarten teacher completes the Autism Behavior Checklist, adapted from the CARS and DSM-5 frameworks, over a 3-month period.
- **Key areas of concern:** eye contact, speech development, repetitive behaviors, sensory sensitivity, social interaction.

Parent Interview and Developmental History:

- The school psychologist or pedagogue conducts structured interviews with parents.
- Focus is placed on developmental milestones such as language acquisition, joint attention, and symbolic play.
- Teachers and parents collaboratively provide early developmental records, including medical and family history

Required Documentation for Referral to Diagnostic Center

- Formal written request signed by parents or guardians
- Observation report by school or preschool (covering at least 3 months)
- Developmental history form (from prenatal period to present)
- Previous reports or evaluations, if any (speech therapy, pediatric, etc.)
- Copies of ID documents (child and parent)

Testing and Assessment at Diagnostic Centers

Assessments are typically conducted at:

- Institute for Mental Health of Children and Adolescents – Skopje
- Regional Child Development Centers or Special Education Resource Centers

Screening Tools:

- M-CHAT-R/F (Modified Checklist for Autism in Toddlers – Revised) for children aged 16–30 months
- CARS-2 (Childhood Autism Rating Scale) – used across early and middle childhood

Cognitive and Adaptive Tests:

- WISC-IV (for ages 6–16): Emphasis on Verbal Comprehension, Processing Speed
- Vineland Adaptive Behavior Scale: Assessment of daily living, communication, and motor skills
- ADOS-2 (Autism Diagnostic Observation Schedule) may be used where available

Diagnosis Process

Diagnosis is made through a multidisciplinary team meeting involving:

- Clinical psychologist
- Special education expert
- Speech therapist
- Child psychiatrist (approval mandatory)
- Diagnosis follows the DSM-5 criteria and considers:
- Persistent social communication deficits
- Restricted, repetitive behaviors and interests

- Symptom presence from early developmental period
- Rule-out of intellectual disability or comorbid conditions (e.g., ADHD, anxiety)

Report Issuance and Educational Placement

A formal Special Needs Diagnosis Report is prepared, outlining the child's strengths and needs.

Recommended Support Education (weekly):

- Mild ASD: 8 hours
- Moderate ASD: 12 hours

Placement Options:

- Inclusive education in mainstream classes with accommodations
- Special education classrooms within public schools (for children needing higher levels of support)
- In some cases, referral to Day Centers for Children with Autism

Monitoring and Reevaluation

- Individualized Education Plan (IEP) meetings are held every 3 months, involving teachers, parents, and the school support team
- A comprehensive annual reassessment is conducted at the diagnostic center, including reapplication of behavioral and cognitive tests
- IEP goals and placement recommendations are adjusted based on updated findings

Important Information:

Duration of Diagnosis Process: 45–60 calendar days

Fee: All diagnostic and support services in the public system are free of charge

Objection Rights: Parents may seek an independent evaluation from university psychiatry clinics or licensed private specialists

Report Validity: Valid for 1 academic year, renewable upon reassessment

ASD diagnosis process in Lithuania

Preliminary Screening and Referral

- **Classroom Observation:** Teachers monitor children for signs of social communication difficulties, repetitive behaviors, and sensory sensitivities. If concerns persist, they refer the child to the school's support team.
- **School Counseling Service:** Pedagogical-Psychological Services (PPS) conduct initial behavioral assessments and consult with parents and teachers. If ASD is suspected, a formal evaluation is initiated.

Application and Documents

Required Documents:

- Referral from a teacher or school psychologist.
- Parental consent.
- Developmental history and academic records.
- Medical documentation if available.

Evaluation Process

Tests and Applications:

- Standardized tools such as:
- Autism Diagnostic Interview-Revised (ADI-R)
- Autism Diagnostic Observation Schedule (ADOS)
- Social Communication Questionnaire (SCQ)
- These tools assess communication, social interaction, and repetitive behaviors.

Special Education Assessment Board:

- A multidisciplinary team (psychologists, special educators, speech therapists) reviews the results.
- The team may recommend additional medical or neurological evaluations.

Diagnosis Decision and IEP Preparation

Criteria:

- Persistent deficits in social communication and interaction.
- Restricted, repetitive patterns of behavior.
- Symptoms must be present in early developmental stages and cause significant impairment [2].

Individualized Education Plan (IEP):

- Created collaboratively by the school, specialists, and parents.
- Includes tailored goals, accommodations (e.g., visual schedules, sensory breaks), and support services.

Placement and Monitoring

Education Environment:

- Most children with ASD are educated in mainstream classrooms with support.
- Specialized classes or schools are available for children with more intensive needs.

Monitoring:

- Regular reviews of the IEP and child's progress.
- Adjustments are made based on developmental changes and feedback from educators and parents.

Recommendations for teachers

Structured Environment

- Visual Schedule Board
    - Show the daily routine with picture cards (first math → then art)
    - Have them mark completed activities with ✔
- Study Corners
    - Quiet corner (for use during sensory overload)
    - Individual desk (for focusing on activities)
- Clear Boundaries
    - Make seating areas clear with floor tapes

Communication and Social Skills

- Social Stories
    - Prepare step-by-step illustrated guides such as "How to go to recess?"
- Being a Role Model
    - Have short dialogue rehearsals with peers ("Hello, what's your name?")
- Visual Communication Board
    - Use picture cards such as "I want water", "I need help"

Sensory Regulation

- Flexible Seating Options
    - Balance cushion, standing desk
- Sensory Tools
    - Stress ball, spiky eraser (for use during anxiety)
- Noise Reduction
    - Allow the use of headphones

Academic Adaptations

- Concrete Teaching
    - Mathematics: Addition-subtraction with beads
    - Turkish: Word teaching with object cards
- Simplifying Instructions
    - Instead of "Open your notebook, do question 3 on page 35":
        - 1. "Open your notebook" (wait)
        - 2. "Find the page that says 35"
- Alternative Assessment
    - Oral presentation or illustrated project instead of written exam

Behavior Support

- Positive Reinforcement
    - Instant reward: Sticker, hug, "Well done, you sat very nicely!"
- Transition Warning
    - Announce activity changes 5 minutes in advance
- Silent Communication Methods
    - Sign language system (e.g.: finger to lips gesture instead of "Quiet")

Summary

Diagnosis (DSM-5-TR)

- Difficulties in social communication (eye contact, peer relations)
- Repetitive behaviors (routine obsessions, stereotypies)
- Sensory sensitivities (reaction to loud noise, tactile rejection)

Classroom Tips

- Speech delay/echolalia
- Playing alone in games
- Excessive reaction to lesson changes

Effective Strategies (Top 5 Items)

- Visual schedule: Illustrated daily routine
- Concrete teaching: Mathematics with beads
- Short instructions: "Open your notebook" → "Take your pen"
- Sensory regulation: Noise-canceling headphones
- Positive reinforcement: Instant sticker/praise

Last Things to Remember

✓*Autism is a spectrum; every child is different.*

✓*Social-academic skills develop with early intervention.*

✓*Peer support is of critical importance.*

Depression

What is it?

Depression in children is a mood disorder characterized by persistent sadness, loss of interest, and low energy that lasts for at least 2 weeks and impairs functionality. According to DSM-5-TR, unlike adults, restlessness, anger outbursts, or somatic complaints (abdominal pain, headache) may be prominent. A decline in school performance, withdrawal from friends, and disinterest in beloved activities are typical symptoms in school-age children. Sleep-appetite changes (oversleeping/insomnia, weight loss/gain) may accompany it. Negative thoughts such as "I am worthless" and "Nothing is fun" are common. A notable point is that children have difficulty verbally expressing their feelings; they signal with behavioral changes. Early diagnosis and intervention are critical to protect academic-social development.

What are the reasons?

Biological Factors

- Genetic Predisposition:
  - The risk increases by 2-4 times if there is a family history of depression.
  - *Example: If parents have had depression, the likelihood of it occurring in the child can increase to 40% (APA, 2023).*
- Changes in Brain Chemistry:
  - Serotonin and dopamine imbalances affect mood, especially in the pre-adolescent period.
- Hormonal Changes:
  - Hormonal fluctuations in early adolescence can increase emotional fragility.

Psychological Factors

- Negative Cognitive Schemas:
- Automatic thoughts such as "I am a failure" and "Nobody loves me."
- Traumatic Experiences:
- The risk of depression is 3 times higher in children exposed to peer bullying (WHO, 2022).
- Perfectionism:
  A feeling of "inadequacy," especially in children under high academic expectations.

Socio-Environmental Triggers

- Domestic Conflicts:
  - Divorce, violence, or lack of communication.
- Academic Pressure:
  - Exam anxiety, excessive criticism due to low grades.
- Social Isolation:
  - Lack of face-to-face interaction during the pandemic increased depression cases by 30% (TUIK, 2023).

Risk Factors Specific to Turkey

- Competition in the Education System:
  - Sleep disorders + depression are common in children preparing for LGS/TYT.
- Screen Addiction:

- Depressive symptoms are twice as common in children who use digital devices for 4+ hours a day (MoNE Report, 2024).

Critical Warnings to Teachers:

- Behaviors thought to be "spoiled" or "lazy" may be symptoms of depression!
- Boys may react with anger outbursts, while girls may react with withdrawal.

Prevalence in the world and participating countries

Situation Worldwide

- **General Prevalence:** The incidence of depression in school-age children (6-12 years) is 2-3%, and 5-8% in adolescents (13-18 years) (WHO, 2023).
- **Gender Difference:** The risk of depression in girls increases 2 times from adolescence (due to hormonal and social factors).
- **Increasing Trend:** Up to a 40% increase in child depression cases in the last 10 years (peer bullying and digital addiction are effective).

Prevalence in Turkey

- MoNE (2023) Report:
  - It was detected at 4% in primary school children and 7% in secondary school.
  - **Most at-risk areas: Rates are approaching 10% in metropolitan cities (Istanbul, Ankara, Izmir) due to intense academic competition.**
- TUIK Child Mental Health Survey (2023):
  - 8 out of every 100 children in the 12-14 age group show clinically significant depressive symptoms.
  - Male children mostly manifest with "anger/behavioral problems," while female children manifest with "withdrawal."

Prevalence in the Netherlands

An estimated 2-3% of young people under the age of 18 suffer from a depressive disorder. Diagnosis is carried out by youth mental health institutions (psychologists, psychiatrists). The process consists of interviews, questionnaires (e.g. CDI) and observations. Treatment may consist of cognitive behavioral therapy, systemic therapy and medication.

Prevalence in North Macedonia

Although national epidemiological data is limited, mental health professionals estimate that approximately 4–6% of primary school children and 6–8% of secondary school adolescents show symptoms consistent with depression. In larger cities such as Skopje, Bitola, and Ohrid, the prevalence tends to be higher due to increased academic and social pressures. Reports from the Institute for Mental Health of Children and Adolescents and school psychological services note that:

- Male children often present with externalizing behaviors such as irritability and aggression.
- Female children are more likely to exhibit internalizing symptoms such as withdrawal and sadness.

Prevalence in Lithuania

- A nationwide epidemiological study found that 13.1% of Lithuanian children aged 7–16 years have psychiatric disorders, with depression and anxiety being among the most common.
- Girls report more emotional difficulties than boys, especially in older age groups.
- According to global data, Lithuania has a depressive disorder rate of 6.96%, with approximately 183,516 cases reported nationally.

Misconceptions (Scientific Facts)

- Children don't get depressed, what could be their problem?

Fact: Clinical depression is also seen in children. It can be diagnosed from the age of 5 (DSM-5-TR).

- It's just spoiledness; it will pass with a little discipline.

Fact: Depression is not a character weakness but a medical condition. It is associated with changes in brain chemistry.

- It's just adolescence; it will get better when he/she grows up.

Fact: Untreated depression can become chronic. Adolescent depression increases the risk of suicide 4 times (WHO, 2023).

- He/she is sad because he/she is not studying.

Fact: Depression may not be the cause but the result. Depression may be underlying low academic performance.

- He/she is unhappy because he/she is playing on the phone.

Fact: Digital addiction may not be the cause of depression but the result. Children may turn to the screen because they are unhappy.

- Let him/her socialize; he/she will get better immediately.

Fact: A child with depression has difficulty socializing. He/she needs to be supported with therapy/medication first.

- His/her family has spoiled him/her a lot; he/she gets everything he/she wants.

Fact: Depression is unrelated to spoiling. Even overprotective parenting alone does not cause depression.

- He/she is "choosing to be sad."

Fact: Depression is not a choice. Children cannot control their emotions; it is a biological condition.

- It will pass if he/she prays/thinks positively.

Fact: Depression is not a lack of spirituality. Medical and psychological support is essential.

- Antidepressants are harmful to children.

Fact: It is safe when used under expert control. There are FDA-approved drugs for those over 8 years old.

How to recognize depression

Changes in Academic Performance

- Sudden drop in academic success:
  - Significant worsening of previously good grades
  - Not doing or half-finishing homework
- Distractibility:
  - Daydreaming during class, responding late to questions
  - Forgetfulness (losing a pen, forgetting homework)
- Decreased participation:
  - Unwillingness to participate in classroom activities
  - Avoiding talking by saying "I don't know"

Emotional-Behavioral Signs

- Constantly unhappy expression:
  - Facial expression becoming dull, rarely smiling
- Anger outbursts or excessive withdrawal:
  - Overreacting to small stimuli (change of desk, minor criticism)
  - Sitting alone during recess, not participating in games
- Expressions of worthlessness:
  - Sentences like "I am a failure," "Nobody loves me"

Physical Symptoms

- Energy loss:
  - Looking tired, sitting hunched over in the desk
  - Slowing down in movements
- Sleep/appetite changes:
  - Drowsiness in class or hyperactivity (due to insomnia)
  - Not opening the lunchbox or overeating
- Somatic complaints:
  - Frequently making excuses for stomachaches, headaches

Differences in Social Relationships

- Distancing from friends:
  - Not talking even to his/her best friend
  - Refusing to go to birthday parties

Depression diagnostic criteria (According to DSM-5-TR)

At least 5 of the following symptoms must be present for a period of 2 weeks and cause a change in functionality. At least 1 symptom must be either (1) depressed mood or (2) loss of interest/pleasure:

- Depressive mood: May also be seen as irritability (excessive nervousness) in children.
- Marked decrease in interest or pleasure (in most activities).
- Weight loss or gain (failure to gain expected weight in children).
- Insomnia or excessive sleep (hypersomnia).
- Psychomotor agitation or retardation (noticeable restlessness or slowing down).
- Fatigue/loss of energy.

- Feelings of worthlessness or inappropriate guilt (in children, as excessive worry about academic failure).
- Decreased ability to think/concentrate or indecisiveness.
- Recurrent thoughts of death, suicidal plan or attempt.

Symptoms cause clinically significant distress or social/functional impairment. It is not better explained by substance use or a medical condition.

Depression diagnostic process in the participating countries

Depression diagnostic process in Turkey

Preliminary Assessment (School and Family Collaboration)

- The process starts with teacher or family complaints.
- The school counseling service observes the child's behaviors (introversion, academic decline, social withdrawal, etc.).
- Behavior assessment scales (Children's Depression Scale, Conners Rating Scale) can be applied.

Referral to RAM

- The school counseling service refers the family to the Guidance and Research Center (RAM).
- Psychological assessment is carried out at RAM:
    - Clinical interview (separately with the child and family).
    - Psychometric tests (Beck Depression Inventory, Depression Scale for Children).
    - Observation and behavior analysis.

Referral to Child Psychiatry

- RAM refers to the child psychiatry clinic if depressive symptoms are severe or if there is a risk of suicide.
- By the child psychiatrist:
    - DSM-5 or ICD-10 diagnostic criteria are validated.
    - Physical examination (for differential diagnoses such as thyroid, vitamin deficiency, etc.).
    - Family history (genetic predisposition is investigated).

Diagnosis and Treatment Plan

- After a definitive diagnosis is made, an individualized education plan (IEP) is prepared (for the school support process).
- Treatment options:
    - Psychotherapy (Cognitive Behavioral Therapy, Play Therapy).
    - Drug therapy (SSRI group antidepressants in severe cases, can only be prescribed by a child psychiatrist).
    - Family counseling.

Support Process at School

- With the RAM report, the child is enrolled in inclusive education.
- Awareness trainings are organized for teachers.
- In-class psycho-social support practices (motivation-enhancing activities, peer support).

Important Notes:

- Family approval is mandatory in the diagnostic process in Turkey.
- Free diagnostic services are available in RAM and state hospitals.
- In private institutions, child psychologist + psychiatrist collaboration is required for diagnosis.

Depression diagnosis process in Croatia

Preliminary Evaluation (School and Family Cooperation)

- The process starts with complaints from the teacher or family.
- The school guidance service observes the child's behaviors (introversion, academic decline, social withdrawal, etc.).

Psychological evaluation is carried out in hospital at psychiatrist and psychologist

- Clinical interview (separately with the child and family).
- Psychometric tests (Beck Depression Inventory, Depression Scale for Children).
- Observation and behavior analysis.

Referral to Child Psychiatry

- If there is a doubt that the child/student may harm himself or others.
- By the child psychiatrist:
    - DSM-5 or ICD-10 diagnostic criteria are validated.
    - Physical examination (for differential diagnoses such as thyroid, vitamin deficiency, etc.).
    - Family history (genetic predisposition is investigated).

Diagnosis and Treatment Plan

- After a definitive diagnosis is made, an individualized education plan is prepared if the student has a Decision on the appropriate form of education (for the school support process).
- **Treatment options:**
    - Psychotherapy
    - Drug therapy
    - Family counseling.

Support Process at School

- The child is admitted to inclusive education if there is need for that
- Awareness training/informations are organized for teachers.
- Psycho-social support practices in the classroom

Depression diagnostic process in the Netherlands

- Signs are often noticed by the school, parents or general practitioner.
- Diagnosis takes place at the youth mental health institution by a child and adolescent psychiatrist or mental health psychologist.
- The examination includes interviews, behavioral observations and questionnaires (e.g. CDI, SDQ).
- Comorbidity such as anxiety disorders or behavioral problems is also taken into account.

Application via SWV

- The school collects observations and action plans in a pupil file.
- Parents and school can jointly submit a support application to the appropriate educational SWV.
- Documents: school results, evaluation of guidance, reports from GP or mental health services.

Evaluation process SWV

- The SWV assesses the need for support at school level.
- Experts (remedial educationalist, behavioural scientist) advise whether additional arrangements are necessary.

Diagnosis decision

- The diagnosis is made by a qualified diagnostician within the youth mental health care system.
- Parents receive treatment advice (e.g. cognitive behavioural therapy, systemic therapy, medication).

Placement and monitoring

- Pupils can remain in mainstream education with extra guidance and flexibility.
- In the event of serious problems, temporary special education (cluster 4) can be provided.

Monitoring is carried out via treatment and support plans, with evaluations between the school, parents and practitioners.

Depression diagnosis process in North Macedonia

Preliminary Evaluation (School and Family Collaboration)

- The process typically begins with concerns raised by teachers, school counselors, or parents regarding changes in behavior such as social withdrawal, academic decline, or mood fluctuations.
- School psychologists or pedagogues observe the student over time and may administer standardized screening tools such as the Children's Depression Inventory (CDI) or Beck Depression Inventory for Youth (BDI-Y).
- Behavioral observations and teacher reports are compiled.

Referral to Educational-Psychological or Mental Health Services

- The school guidance team or psychologist formally refers the student and family to the Regional Center for Educational-Psychological Support or directly to a Child and Adolescent Mental Health Clinic.
- At these centers, a more comprehensive psychological evaluation is performed, including:
- Clinical interviews with the child and family.
- Psychometric assessments (e.g., Beck Depression Inventory, Children's Depression Scale).
- Observation and behavioral analysis.

Referral to Child Psychiatry Services

- For cases with severe symptoms, suicidal ideation, or complex comorbidities, referral to a child psychiatrist is arranged.

- The child psychiatrist conducts:
- Diagnostic interviews using DSM-5 or ICD-10 criteria.
- Physical examinations to exclude medical causes (e.g., thyroid dysfunction, vitamin deficiencies).
- Family history assessment to explore genetic predispositions.

Diagnosis and Individualized Treatment Plan

- After a confirmed diagnosis, the educational and health teams collaborate to develop an Individualized Education Plan (IEP) focusing on school support.

Treatment options may include:

- Psychotherapy: Cognitive Behavioral Therapy (CBT), play therapy, or family therapy.
- Pharmacotherapy: Prescribed by child psychiatrists in severe cases, generally SSRIs.
- Family counseling and psychoeducation to support the child's environment.

Support and Monitoring at School

- The student is integrated into inclusive education settings with accommodations as outlined in the IEP.
- Teachers receive awareness and sensitivity training regarding depression and its impact on learning.
- Psycho-social support strategies such as peer mentoring, motivational activities, and counseling sessions are implemented within the school environment.

Important Notes:

- Parental consent and involvement are mandatory throughout the assessment and treatment process.
- If you are insured under the Health Insurance Fund (HIF), Public diagnostic and treatment services are available free of charge through the Ministry of Health and Centers for Educational and Psychological Support.
- In private settings, diagnosis typically involves collaboration between licensed child psychologists and psychiatrists.

Depression diagnosis process in Lithuania

Preliminary Screening and Referral

- **Classroom Observation:** Teachers monitor students for signs of withdrawal, sadness, irritability, and academic decline. If symptoms persist, they refer the student to the school's support team.
- **School Counseling Service:** School psychologists or social pedagogues conduct initial interviews and use screening tools like the Strengths and Difficulties Questionnaire (SDQ) or Patient Health Questionnaire (PHQ-9).

Application and Documents

Required Documents:

- Referral from a teacher or school psychologist.
- Parental consent.
- Academic and behavioral records.
- Medical history if available.

Evaluation Process

Tests and Applications:

- Structured interviews and validated questionnaires (e.g., PHQ-9, Beck Depression Inventory).
- In some cases, advanced methods like AI-based analysis of speech and EEG data are being explored by researchers at Kaunas University of Technology (KTU) to improve diagnostic accuracy.

Special Education Assessment Board:

- A multidisciplinary team (psychologists, educators, social workers) reviews the data.
- May refer the child to child and adolescent psychiatric services for clinical diagnosis.

Diagnosis Decision and IEP Preparation

Criteria:

- Symptoms must persist for at least two weeks.
- Must cause significant impairment in social, academic, or emotional functioning.

Individualized Education Plan (IEP):

- Developed collaboratively with parents, teachers, and specialists.
- Includes emotional support strategies, academic accommodations, and possible therapeutic interventions.

Placement and Monitoring

Education Environment:

- Students with depression typically remain in mainstream classrooms.
- May receive support from school psychologists or attend therapeutic groups.

Monitoring:

- Regular follow-ups by school staff and mental health professionals.
- Adjustments to the IEP based on progress and feedback.

Recommendations for teachers

Notice the Symptoms and Be Sensitive

- Observe symptoms such as introversion, a sudden drop in lesson performance, anger outbursts, or constant fatigue in the child.
- Do not use judgmental labels such as "laziness" or "spoiledness".

Establish a Safe Relationship

- Approach with open-ended questions such as, "I see you a little sad today, would you like to talk?"
- Listen patiently, without forcing.

Cooperate with the School Counseling Service

- If you suspect, refer to the school psychologist/RAM.

- Encourage them to seek professional support by contacting the family.

Make Supportive In-Classroom Arrangements

- Provide academic flexibility such as working with small groups and allowing extra time.
- Give feedback on their achievements ("It was great that you solved this question!").

Be Routine and Consistent

- Children with depression are anxious about uncertainty. Establish clear instructions and a predictable classroom routine.

Break Social Isolation

- Encourage peer support (e.g., include him/her in group projects).
- Show zero tolerance for bullying.

Reinforce Positive Behaviors

- Appreciate small steps. ("Thank you for bringing your notebook today").
- You can use external motivation (sticker, point system).

Support Self-Care Skills

Quietly remind children who have personal hygiene problems due to forgetfulness/fatigue ("Would you like to wear a clean t-shirt tomorrow?").

Be Alert to Suicide Risk

- If you hear sentences like "Life is not worth living," immediately report it to the guidance service.
- Never ignore it.

Educate Yourself and Get Support

  - Participate in the Ministry of National Education's "Mental Health Awareness" trainings.

Summary

What is it?

- Childhood depression is a mood disorder characterized by intense sadness, loss of interest, physical and cognitive changes lasting at least 2 weeks.

What are the causes?

- Genetic predisposition, imbalances in brain chemistry, trauma, family conflicts, or chronic stress can trigger it.

Prevalence?

- It is seen in 2-3% of children worldwide; the prevalence in adolescents in Turkey is between 4-8%.

False Beliefs?

- The myth that "Children do not get depressed" is false; it can manifest itself with irritability and somatic complaints.

How to Recognize?

- Decline in academic achievement, social withdrawal, sleep/appetite changes, and anger outbursts are typical signs.

Diagnostic Criteria?

- According to DSM-5, at least 5 symptoms (e.g., sadness, loss of energy, feeling of worthlessness) must be observed for 2 weeks.

Recommendations for Teachers?

- Provide reassurance, reinforce small successes, cooperate with the school-family-guidance triangle, and be alert to suicide risk.

Anxiety Disorders

What Is It?

Anxiety disorder in children is an excessive and uncontrollable state of fear, worry, and unease relative to their age. This condition significantly affects the child's daily life, academic performance, and social relationships. Children with anxiety disorder may experience intense stress even in situations where there is no real threat, and this may manifest itself with physical symptoms (abdominal pain, sweating, trembling). In the school environment, the thought of "what if I can't do it?" frequently, avoiding speaking in class, or excessive excitement in situations requiring performance can be observed. These children may seek more reassurance compared to their peers and may overreact to routine changes. Anxiety disorder disrupts the child's emotional and behavioral balance and can lead to a lack of self-confidence in the long term.

What are the Causes?

Genetic Predisposition

- The risk of occurrence is 2-4 times higher in children with a family history of anxiety disorder or depression.

Imbalances in Brain Chemistry

- Dysfunction of neurotransmitters such as serotonin, norepinephrine, and GABA leads to an excessive state of alarm.

Temperament Characteristics

- The risk is high in children who exhibit "behavioral inhibition" (overly reactive, timid to new situations).

Parental Attitudes

- Overprotective ("You'll fall!") or perfectionist ("Why not 100?") parents can trigger anxiety.

Traumatic Life Events

- Stressors such as divorce, school change, illness, or loss can create lasting anxiety in a child.

Academic Pressure

- The exam-oriented education system and performance anxiety fuel anxiety disorder, especially in grades 3-8.

Social Experiences

- The risk of developing social anxiety increases in children who are exposed to or excluded from peer bullying.

Technology and Social Media

- Cyberbullying or representations of "ideal life" can reinforce feelings of inadequacy in children.

Prevalence in the world and participating countries

Global Prevalence:

- Lifetime prevalence: 7-25% of children experience clinical levels of anxiety disorder (Kessler et al., 2012).
- Most common types:
    - Separation anxiety (4-5%),
    - Social anxiety (3-7%),
    - Generalized anxiety disorder (2-6%).
- Onset age: 6-12 years old (primary school period) is the most critical stage.

Prevalence in Turkey:

- Prevalence of anxiety disorder in school-age children: 10-15% (Turkish Association for Child and Adolescent Psychiatry, 2021).
- Regional differences:
    - Rates are 12-18% in metropolises (Istanbul, Ankara),
    - While it is around 8-10% in rural areas.
- Gender distribution: It is seen 2 times more in girls than in boys.

Prevalence in the Netherlands

Approximately 10% of children and young people experience an anxiety disorder. Diagnosis is carried out by youth mental health services, using questionnaires (e.g. SCARED), interviews and observations. Treatment usually consists of cognitive behavioral therapy and parental guidance. In severe cases, medication may be used.

Prevalence in North Macedonia

While there is no comprehensive national prevalence data, studies and clinical observations estimate that 10–14% of school-aged children exhibit anxiety symptoms. Higher rates are reported in urban centers such as Skopje and Bitola, where academic pressures and social challenges are more pronounced. Anxiety disorders tend to be diagnosed approximately twice as often in girls compared to boys, consistent with international trends.

Prevalence in Lithuania

- A large-scale study conducted in 2021–2022 among Lithuanian adolescents aged 11–17 found that approximately 24% of participants experienced moderate to severe anxiety symptoms.
- Girls were significantly more likely to report anxiety than boys. Female gender was a strong predictor of anxiety, with an odds ratio of 2.87, indicating nearly three times higher likelihood compared to boys.
- Anxiety prevalence remained stable across two major crises: the COVID-19 pandemic and the onset of the Russo–Ukrainian War, suggesting persistent mental health challenges among youth.

Misconceptions (Scientific Facts)

- Children do not worry, they just want to attract attention!

Fact: Anxiety disorders are also clinically diagnosed in childhood. In DSM-5, there are childhood-specific anxiety diagnoses such as Separation Anxiety Disorder and Selective Mutism.

- A little stress is good, it motivates!

Fact: Chronic anxiety increases cortisol levels and damages brain development. It prevents learning, does not motivate.

- Exam anxiety is normal, every child experiences it!

Fact: Mild tension before the exam is normal, but vomiting, trembling, or school refusal is a sign of pathological anxiety.

- My child is very smart, that's why he thinks about everything!

Fact: There is no direct relationship between anxiety and intelligence. Perfectionism is a risk factor that triggers anxiety.

- They calm down when they take the tablet, it helps!

Fact: Calming down when in front of the screen is an avoidance behavior. It fuels anxiety in the long run.

- Boys don't worry, this is a girl's disease!

Fact: Anxiety in boys can be masked by outbursts of anger or hyperactivity. Gender differences can lead to missed diagnoses.

- If they go to a psychologist as a child, they will be stigmatized!

Fact: Early intervention prevents chronicity. Working with the school psychologist is a natural process.

- If the family is anxious, the child will learn it too, there is nothing to do!

Fact: Although there is a genetic predisposition, it can be controlled with environmental regulations (e.g., cognitive behavioral techniques).

- Anxious children can never be leaders!

Fact: Anxious children who receive regular therapy can develop strong points such as empathy and attention to detail.

- Medications are addictive, they should never be used!

Fact: SSRI group drugs are used when necessary and under the control of a psychiatrist. They are not addictive.

How to recognize anxiety disorder

Constant Search for Approval

- Repetitive questions such as "Is this correct?" and "What happens if I do it wrong?".
- Frequently requests feedback from teachers/peers.

Performance Avoidance

- Extreme fear of getting up to the board and giving presentations.
- Tendency to "leave blank" or submit early in exams.

Perfectionism

- Erasing writing repeatedly with an eraser, pressure to "do my best".
- Excessive sadness over small mistakes (e.g., crying when the edge of the page is wrinkled).

Physical Complaints

- Unexplained stomach/headache, frequent urge to go to the toilet.

- Difficulty in Peer Interaction

Sitting alone during recess instead of participating in the game.

- Avoiding group work, saying "Let me be the audience".
- Keeping communication limited even if they do not fight with their friends.

Order Obsession

- Overreacting to the displacement of their desk/materials.
- Stress in routine changes such as "Why did a different teacher come today?".

Excessive Preparedness Effort

- Studying early and intensively for the exam 3 days later.
- Checking homework repeatedly, asking "Is there anything missing?" when it is finished.

Anxiety disorder diagnostic criteria (According to DSM-5-TR)

Generalized Anxiety Disorder

- Excessive anxiety lasting at least 6 months on more than one subject (school success, family health, etc.).
- At least 3 of the following symptoms:
    - Restlessness/easily getting tired,
    - Difficulty concentrating,
    - Muscle tension,
    - Sleep problems,
    - Easily startled.

Separation Anxiety Disorder

- Fear of leaving home/parents (such as refusing to go to school).
- 3 of the following symptoms lasting at least 4 weeks:
    - Excessive distress with anticipation of separation,
    - Not wanting to go to school,
    - Not being able to sleep alone,
    - Nightmares about separation,
    - Physical complaints (stomach ache, dizziness).

Social Anxiety Disorder

- Fear of performing in front of peers/teachers.
- One of the following behaviors:
    - Avoiding social situations,
    - Intense distress (crying, tantrums),
    - Duration of at least 6 months.

Selective Mutism

- Not speaking in specific environments (e.g., at school),
    - Normal speaking in other environments (at home),
    - Duration of at least 1 month (excluding the first month of school).

Specific Phobia

- Excessive fear of a specific object/situation (exam, animal, needle, etc.),
    - Immediate anxiety response (trembling, screaming),
    - Avoidance behavior (e.g., fear of doing experiments in science class).

Important Notes:

- For diagnosis, symptoms must impair the child's functionality (such as school absenteeism, decline in grades).
- **Differential diagnosis:** Should not be confused with attention deficit, depression, or autism.

Anxiety disorder diagnosis process in the participated countries

Anxiety disorder diagnosis process in Turkey

Initial Observation (In the School Environment)

- **Anxiety symptoms are identified by the teacher/guidance counselor:**
    - School refusal, frequent physical complaints, social withdrawal.
    - Recorded with behavior observation forms and teacher interviews.

Family Interview

- The school counseling service contacts the family:
    - Symptoms in the home environment (sleep problems, separation anxiety, etc.) are evaluated.
    - Family history (presence of anxiety disorder in the family) is questioned.

Application to Guidance and Research Center (RAM)

- The family is referred to RAM. Process:
    - Psychoeducational assessment (WISC-R intelligence test, projective tests).
    - Anxiety scales (Anxiety Scale for Children, Conners Scale).
    - Clinical interview (separately with the child and family).

Referral to Child Psychiatrist

- RAM refers to a child psychiatrist for clinical diagnosis:
    - DSM-5 criteria are validated.
    - Differential diagnosis (ADHD, depression, autism spectrum are ruled out).
    - If necessary, medical examinations (thyroid hormone test, EEG, etc.).

Diagnosis and Reporting

- **After a definitive diagnosis is made:**
    - RAM report is prepared (valid for inclusion education).
    - Individualized Education Program (IEP) is prepared.

Treatment Plan

- School Supports:
  - Anxiety management studies with the guidance service.
  - In-class adaptations for the teacher (allowing extra time, small group work).
- Clinical Supports:
  - Cognitive Behavioral Therapy (CBT) (weekly sessions).
  - Drug treatment (only in severe cases and under psychiatrist control).

Important Information:

- RAM reports are free of charge and MEB approved.
- The diagnosis process may take 4-6 weeks.
- Diagnosis/treatment cannot be initiated without family consent.

Anxiety disorder diagnosis process in Croatia

First Observation (In the School Environment)

- Anxiety symptoms are detected by the teacher/guidance counselor:
  - School refusal, frequent physical complaints, social withdrawal.
  - It is recorded with behavior observation forms and teacher interviews.

Family Interview

- The school counseling service contacts the family:
  - Symptoms in the home environment (sleep problems, separation anxiety, etc.) are evaluated.

The family is directed to the doctor and medical team who is doing evaluation.

If student/child has severe problem with anxiety, than we can contact the hospital (school doctor contacts them).

Diagnosis and Reporting

- After a definitive diagnosis is made:
  - If there is a need for the Decision on the appropriate form of schooling, then we make the IEP or IK (individualized curriculum).

Treatment Plan

- School Supports:
  - In-class adaptations for the teacher (allowing extra time, small group work).

Anxiety disorder diagnostic process in the Netherlands

- Signs are often noticed by the school, parents or general practitioner.
- Diagnosis is carried out by youth mental health services by psychologists or remedial educationalists.
- The assessment includes interviews, behavioral observations and questionnaires (e.g. SCARED, SDQ)
- The impact on functioning and any comorbidity (e.g. depression, ADHD) is examined.

Application via SWV

- The school compiles a pupil file with observations, interventions and evaluations.
- Parents and school submit a joint application to the SWV for appropriate education.
- Documents: action plans, evaluation reports, any medical/psychological reports.

Evaluation process SWV

- The SWV assesses the request for support and advises on appropriate education or additional guidance.
- Experts are involved to substantiate the advice.

Diagnosis decision

- The diagnosis is made by a qualified diagnostician in youth mental health care.
- Parents receive treatment advice (e.g. cognitive behavioral therapy, parental guidance, medication if necessary).

Placement and monitoring

- In principle, pupils follow regular education, with adjustments such as extra guidance, quiet workspaces or flexible planning.
- In case of serious problems, special education (cluster 4) may be necessary.
- Monitoring takes place through joint evaluations by the school, parents, practitioners and the SWV.

Anxiety disorder diagnostic process in North Macedonia

Initial Observation in the School Environment

Anxiety-related behaviors are typically first noticed by:

- Teachers
- School counselors or psychologists

Common symptoms include:

- School refusal or frequent absences
- Complaints of headaches, stomachaches, or other physical symptoms without medical causes
- Social withdrawal or excessive worry
- These observations are recorded through:
- Behavior observation forms
- Teacher interviews and checklists

Family Interview

- The school psychological service contacts the family to:
- Discuss observed symptoms at home (e.g., sleep disturbances, separation anxiety)
- Collect family medical and psychiatric history, focusing on anxiety or related disorders

Referral to Educational-Psychological Support Centers

- Families are referred to Regional Centers for Educational-Psychological Support (CEPS) for further assessment. The evaluation process includes:
- Psychoeducational assessment, including IQ tests (e.g., WISC-IV or Raven's Progressive Matrices)
- Administration of anxiety-specific rating scales such as the Revised Children's Manifest Anxiety Scale (RCMAS) or Screen for Child Anxiety Related Emotional Disorders (SCARED)
- Clinical interviews conducted separately with the child and parents

Referral to Child Psychiatry Services

When clinical symptoms are severe or complex, the child is referred to a child psychiatrist for diagnostic confirmation. The psychiatrist:

- Validates the diagnosis according to DSM-5 or ICD-10 criteria
- Performs differential diagnosis to exclude other conditions such as ADHD, depression, or autism spectrum disorder
- Orders medical examinations if indicated (e.g., thyroid function tests, EEG)

Diagnosis and Reporting

Upon confirmation, a formal diagnostic report is prepared by the CEPS or psychiatric service, which is used to facilitate:

- Enrollment in inclusive education with necessary accommodations
- Preparation of an Individualized Education Plan (IEP) tailored to the student's needs

Treatment and Support Plan

School-Based Supports:

- Anxiety management interventions provided by school psychologists or counselors
- Classroom adaptations such as extra time on tasks, preferential seating, or small group work

Clinical Supports:

- Cognitive Behavioral Therapy (CBT) is the first-line treatment, usually delivered in weekly sessions
- Pharmacotherapy is reserved for severe cases and prescribed by child psychiatrists

Important Information:

- If you are insured under the Health Insurance Fund (HIF), Public diagnostic and support services are provided free of charge through Ministry of Education and Health institutions.
- The entire diagnosis process typically takes 4–6 weeks.
- Family consent is mandatory for all evaluations, diagnosis, and treatment planning.

Anxiety disorder diagnostic process in Lithuania

Preliminary Screening and Referral

- **Classroom Observation:** Teachers observe students for signs of anxiety such as restlessness, avoidance, excessive worry, and difficulty concentrating. If symptoms persist, they refer the student to the school's support team.

- **School Counseling Service:** School psychologists or social pedagogues conduct initial assessments using tools like the Generalized Anxiety Disorder Scale (GAD-7) and Strengths and Difficulties Questionnaire (SDQ).

Application and Documents

Required Documents:

- Referral from a teacher or school psychologist.
- Parental consent.
- Academic and behavioral records.
- Medical or developmental history if relevant.

Evaluation Process

Tests and Applications:

- Validated screening tools such as:
- GAD-7 (Generalized Anxiety Disorder Scale)
- PHQ-9 (for comorbid depression)
- Structured interviews with students and parents.

Special Education Assessment Board:

- A multidisciplinary team (psychologists, educators, social workers) reviews the data.
- May refer the child to child and adolescent psychiatric services for clinical diagnosis.

Diagnosis Decision and IEP Preparation

Criteria:

- Symptoms must persist for several weeks.
- Must cause significant impairment in academic, social, or emotional functioning.

Individualized Education Plan (IEP):

- Developed collaboratively with parents, teachers, and specialists.
- Includes emotional support strategies, accommodations (e.g., reduced workload, safe space), and therapeutic interventions.

Placement and Monitoring

Education Environment:

- Students with anxiety typically remain in mainstream classrooms.
- May receive support from school psychologists or attend therapeutic groups.

Monitoring:

- Regular follow-ups by school staff and mental health professionals.
- Adjustments to the IEP based on progress and feedback.

Recommendations for teachers

Establish a Safe Connection

Give a "I'm here for you" message: Use supportive phrases such as "Shall we solve this question together?".

Start with Small Steps

Break down difficult tasks: Say "Let's do 1 question first, then we'll move on to the others".

Give Advance Notice

Announce changes in advance: Information such as "A guest teacher will come in the 3rd lesson tomorrow" reduces anxiety.

Use Concrete Rewards

Small reinforcers for motivation: "When you complete this task, you can choose a story from the class library" (Symbolic rewards such as stickers and badges also work).

Create a Quiet Starting Point

"Calm Corner" application: Designate an area where a child with increased anxiety can take a 5-minute break (e.g., a quiet reading corner).

Normalize Bodily Sensations

Explain physical reactions: Inform by saying, "When you get excited, your heart beats fast, it's a temporary feeling."

Encourage Peer Support

Develop a "Seatmate System": Assign an outgoing member of the class as a "support buddy" to the anxious child.

Provide Written Instructions

Support verbal instructions with writing: Write step-by-step instructions on the board ("1. Read the question, 2. Take the pen, 3. Mark the first option").

Normalize Making Mistakes

Emphasize "Mistakes are part of learning": "Do you see this mistake I made on the board? That's how I learned!"

Teach Breathing Exercises

A simple technique: "Inhale for 4 seconds → hold for 4 seconds → exhale for 6 seconds" (You can practice with the whole class before the exam).

Bonus:

Define Anxiety Not as an "Enemy" But as a "Companion": "Your anxiety is like a friend trying to protect you. Thank it, but don't give it a say!"

Summary

What is it?

Anxiety disorder in children is characterized by fear and anxiety of a severity inappropriate for their age; it impairs academic/social functioning.

Causes

Genetic predisposition, imbalances in brain chemistry, parental attitudes (overprotectiveness), traumatic life events, and academic pressure can trigger it.

Prevalence

It is seen in 7-25% of children worldwide; the prevalence in school-age children in Turkey is 10-15%.

False Beliefs

Myths such as "Children don't worry" and "It will pass when they grow up" cause the opportunity for early intervention to be missed.

How to Understand?

Constant seeking of approval in the classroom, performance avoidance, perfectionism, physical complaints, and difficulty in peer interaction are typical symptoms.

Diagnostic Criteria

According to DSM-5, symptoms lasting at least 6 months are required for diagnoses of generalized anxiety, separation anxiety, or social anxiety disorder.

Recommendations for Teachers

Provide reassurance, proceed in small steps, use written instructions, teach breathing exercises, and encourage peer support.

Golden Sentence:

"An anxious child is a child who 'needs to be understood,' not 'needs to be fixed.' As a teacher, your patience and knowledge are the most powerful light in their life."

Disruptive Behavior Disorders

What is it?

Disruptive behavior disorder is a disturbance characterized by persistent and repetitive patterns of behavior in children and adolescents that violate the basic rights of others and do not comply with social norms (DSM-5). Aggressive behaviors (physical fighting, harming animals/the weak), destructive acts against property (arson, vandalism), fraud/lying, and serious rule violations (truancy, running away from home) are frequently observed in these children. Symptoms persist for at least 6 months and exceed the behavioral boundaries expected for their age. The disorder leads to serious impairment in the child's social, academic, and family functioning. It is divided into two subtypes in DSM-5: childhood-onset (before age 10) and adolescent-onset. Impulsivity, lack of empathy, and lack of guilt are among its core features. ADHD, oppositional defiant disorder (ODD), and post-traumatic stress disorder should be considered in the differential diagnosis.

What are the causes?

Biological Factors

- **Genetic Predisposition:** The risk increases 4-5 times in children with a family history of antisocial personality disorder or substance use (Viding et al., 2008).
- **Neurochemical Imbalances:** Low serotonin levels are associated with impulsivity, and high testosterone with aggressive behaviors.
- **Brain Structure Differences:** Functional disorders of the prefrontal cortex (impulse control center) and amygdala (emotion processing) are observed.

Psychological Factors

- Low Empathy Skill: Difficulty understanding the feelings of others, not feeling guilty.
- Cognitive Distortions: Thought patterns such as "I am being treated unfairly" trigger aggression.

Familial and Environmental Factors

- Parental Attitudes:
    - Extremely Neglectful or Harsh Discipline ("I grew up with beatings and nothing happened to me" approach).
    - Inconsistent Rules (punishment today, reward tomorrow).
- Early Childhood Traumas: Physical/sexual abuse, neglect, exposure to violence.
- Socioeconomic Factors: Poverty, exposure to gang culture, lack of education.

Social Learning

- Role Modeling: Violent media, relationship with antisocial peer groups.
- Rewarded Negative Behavior: Reinforcement of the belief "I gained respect when I fought".

School Environment

- Peer Bullying: Increases the risk of being both a victim and a perpetrator.
- Learning Difficulties: Academic failure → Anger → Behavioral problems cycle.

Prevalence in the world and participating countries

Prevalence Worldwide

- General Prevalence: Varies between 2-10% in children and adolescents (DSM-5, 2013).
    - More common in boys (3-12%), 2-7% in girls (Rutter et al., 2010).
- Onset Age:
    - Childhood onset (before age 10): More severe, dominant in males.
    - Adolescent onset: Shows an increase in females, has a better prognosis.

Prevalence in Turkey

- In School Age Children (7-15 years): 3-8% (Turkish Association for Child and Adolescent Psychiatry, 2020).
    - 5-10% in males, 2-5% in females.
- City-Rural Difference:
    - 7-12% in metropolises (Istanbul, Ankara) (related to social stress and migration).
    - 2-4% in rural areas (stronger family ties may be protective).
- Diagnosis Rate:
    - Cases reflected in RAM records 1-2% (it is thought that the reflected cases are much lower due to fear of stigmatization and the tendency of families not to seek psychiatric help).

Important Notes:

- The most frequently diagnosed group in Turkey: 12-18 year old males (especially if accompanied by academic failure and substance use).
- Increasing Trend: In the last 10 years, the diagnosis of Disruptive behavior disorder in adolescent girls has increased by 50% (TÇGPD, 2022).

Prevalence in the Netherlands

Oppositional defiant disorder (ODD) and conduct disorder (CD) occur together in 2-5% of young people. Diagnosis is made through behavioral observations, interviews and questionnaires by educational psychologists or youth psychiatrists. Treatment includes family counselling, behavioral therapy and sometimes youth care interventions. Municipalities are responsible for allocating care via the Youth Act

Prevalence in North Macedonia

- Estimated prevalence in school-age children (7–15 years) ranges from 3–7%, with higher rates in boys (5–9%) than girls (2–4%).
- Urban centers such as Skopje and Tetovo report higher rates (~7–12%) linked to social stressors, migration, and family disruption.
- Rural areas show lower prevalence (~2–4%), possibly due to stronger family and community cohesion.
- Official diagnosis rates in educational and health institutions remain low (~1–2%), likely due to stigma and limited access to mental health services.

Prevalence in Lithuania

According to a nationwide epidemiological study of 3,309 children aged 7–16 in Lithuania, the prevalence of conduct disorders was 6.6% overall:

- 7.1% in children aged 7–10
- 6.0% in adolescents aged 11–16

Gender differences were significant: boys were more likely to be diagnosed with disruptive behaviour disorders than girls, consistent with global trends.

Misconceptions (Scientific Facts)

- This Child is Spoiled, Rude!

Fact: Disruptive behavior disorder is a neurobiological disorder. There are functional differences in brain regions responsible for empathy and impulse control (Fairchild et al., 2019).

- It Goes Away on Its Own After Adolescence.

Fact: If left untreated, it can result in antisocial personality disorder, substance dependence, or a tendency to commit crimes (Moffitt, 2018).

- It Only Happens in Children from Bad Families.

Fact: Genetic predisposition, trauma, and environmental factors emerge through complex interaction. Family characteristics alone are not a cause.

- It Can Be Fixed with a Beating!

Fact: Harsh punishments reinforce aggression. Consistent boundaries + positive reinforcement are needed for behavior change (Patterson, 2002).

- He's Doing it on Purpose, Destroying for Fun!

Fact: These children have difficulty with impulse control and predicting consequences. It is not "conscious evil," but a neurodevelopmental problem.

- It Gets Better When the School Is Changed.

Fact: The problem is internal, simply changing the environment does not solve it. School and therapist collaboration is essential.

- Medications Sedate the Child, They Should Not Be Used.

Fact: Medications (e.g., for impulsivity) are only used under the supervision of a psychiatrist and in conjunction with therapies.

- It Is Only Seen in Male Children.

Fact: It may manifest more indirectly in girls (lying, social manipulation).

- It Is Related to Mental Retardation

Fact: It is not directly related to intelligence level. In fact, some children have a high IQ.

- These Children Don't Deserve Love.

Fact: Unconditional acceptance is the cornerstone of Disruptive behavior disorder treatment. "Difficult children are the ones who need the most love."

- Golden Rule for Teachers:

"This child is not 'troubled,' but a child 'who has a problem.' Focus on the behavior instead of labeling him."

How to recognize disruptive behavior disorder

Deliberate and Constant Opposition to Rules

- Open defiance such as "I won't do homework!",
- Knowingly breaking classroom rules (talking without permission, getting up from seat without permission).

Physical Aggression

- Hitting, pushing peers or throwing their belongings,
- Deliberate physical contact with the teacher (bumping shoulders, pushing desks).

Damage to Property

- Breaking/scratching school property, writing on walls,
- Taking or hiding someone else's belongings without permission.

Lying and Manipulation

- Exaggerated lies such as "The dog ate my homework,"
- Forcing peers to take the blame ("Don't rat me out, you did it too!").

Cruel Attitudes

- Constantly giving nicknames to a weak student,
- Not feeling remorse for torturing animals/friends.

Truancy or Absenteeism

- Leaving the classroom without permission during recess,
- Skipping school without parental consent (hiding in the bathroom, running away from the garden).

Serious Rule Violations

- Knowingly pulling the fire alarm,
- Bringing prohibited items to school (pocket knife, cigarette).

Critical Warnings for Teachers:

- Do not think "spoiled behavior" or "attention seeking"! If these behaviors have persisted for at least 6 months, it may be a sign of Disruptive behavior disorder.

Note: The difference from ADHD is that it is intentional and aims to cause harm.

Disruptive behavior disorder diagnostic criteria (According to DSM-5-TR)

A repetitive and persistent pattern of behavior in which the basic rights of others or major social values or rules appropriate to the age are disregarded, as manifested by the presence of at least three of the following 15 diagnostic criteria from any of the following categories during the last twelve months, with at least one criterion present in the last six months:

Aggression Towards People and Animals

- Often bullies, threatens, or intimidates others.
- Often initiates fights.
- Has used a weapon that can cause serious physical harm to others (e.g., a bat, brick, broken bottle, knife, firearm).
- Has been physically cruel to people.
- Has been physically cruel to animals.
- Has stolen while confronting a victim (e.g., mugging, purse snatching, extortion, armed robbery).
- Has forced someone into sexual activity.

Destruction of Property

- Has deliberately engaged in fire setting with the intention of causing serious damage.
- Has deliberately destroyed others' property (other than by fire setting).

Deceitfulness or Theft

- Has broken into someone else's house, building, or car.
- Often lies to obtain goods or favors or to avoid obligations (i.e., "cons" others).
- Has stolen items of nontrivial value without confronting the victim (e.g., shoplifting, forgery).

Serious Violations of Rules

- Often stays out at night despite parental prohibitions, beginning before age 13.
- Has run away from home overnight at least twice while living in the parental or surrogate home or once without returning for a lengthy period.
- Is often truant from school, beginning before age 13.

The disturbance in behavior causes clinically significant impairment in social, academic, or occupational functioning.

The individual is 18 years or older, criteria are not met for antisocial personality disorder.

Disruptive behavior disorder diagnosis process in the participating countries

Disruptive behavior disorder diagnosis process in Turkey

Initial Detection at School

- Teacher/Guidance Service observes the following symptoms:
- Constant fighting, skipping school, vandalism
- Peer bullying or deliberate non-compliance with rules
- Behavior Observation Forms are filled out.

Family Interview

- The guidance counselor contacts the family:
- Behaviors at home (lying, damaging property)
- History of domestic violence/neglect is investigated.

Application to RAM (Guidance and Research Center)

- An appointment is made for a free assessment.
- Procedures performed at RAM:
- WISC-R Intelligence Test (Behaviors incompatible with academic skills?)
- Projective Tests (Drawing pictures, telling stories)
- Conners Rating Scale (Level of impulsivity/aggression)

Referral to Child Psychiatrist

- RAM refers the patient to a child psychiatry clinic (state/university hospital) for a definitive diagnosis.

Psychiatrist:

- Checks DSM-5 criteria,
- Makes differential diagnosis (ADHD, ODD, post-traumatic stress?),
- Orders blood test/EEG if necessary (neurological reasons?).

Diagnosis and Reporting

- If a definitive diagnosis is made:
- RAM Report is issued (right to inclusive education arises),
- IEP (Individualized Education Plan) is prepared.

Treatment Plan

- At school: Social skills training with the guidance service,
    - Training of the teacher in behavior modification techniques.
- In the clinic:
    - Cognitive Behavioral Therapy (CBT),
    - Medication in severe cases (antipsychotics only under the supervision of a psychiatrist).

Important Information

- RAM reports are free of charge and approved by the Ministry of National Education.
- The diagnosis process may take 4-8 weeks.
- Family approval is required (under 18 years old).

Disruptive behaviour disorder diagnosis process in Croatia

Initial Detection at School

- Teacher/Guidance Service observes the following symptoms:
- Constant fighting, truancy, vandalism
- Bullying or deliberate non-compliance with rules
- Behavior Observation Forms are filled out.

Family Interview

- The guidance counselor contacts the family:
- Behaviors at home (lying, damaging property)

- History of domestic violence/neglect is investigated.

Application for the diagnosis

- A school medicine doctor, psychiatrist, psychologist and social pedagogue are included in the assessment
- WISC-R Intelligence Test (Behaviors incompatible with academic skills?)
- Projective Tests (Drawing pictures, telling stories)
- Conners Rating Scale (Level of impulsivity/aggression)

Referral to Child Psychiatrist

- Psychiatrist:
- Checks DSM-5 criteria,
- Makes a differential diagnosis (ADHD, ODD, post-traumatic stress?),
- Orders blood test/EEG if necessary (neurological reasons?).

Diagnosis and Reporting

- If a definitive diagnosis is made then in school we make IK (individualized curriculum)

Treatment Plan

- At school:
    - Social skills training with the psihologist to behavior modification techniques
- In the clinic (if they are obligatory)
    - Cognitive Behavioral Therapy (CBT),
    - Medication in severe cases (antipsychotics only under the supervision of a psychiatrist).

Disruptive behavior disorder diagnostic process in the Netherlands

- Signs are often noticed at school or at home when a child consistently displays transgressive, aggressive or rebellious behavior.
- Diagnosis is carried out by educational psychologists or child and adolescent psychiatrists within the youth mental health care system.
- The assessment includes interviews with parents, teachers and the child themselves, behavioral observations and questionnaires (e.g. CBCL, TRF).
- The broader context (family, school, environment) and any comorbidity (e.g. ADHD) are also taken into account.

Application via SWV

- The school compiles a pupil file with behavioral observations, action plans and previous interventions.
- Parents and school jointly submit an application to the appropriate educational SWV.
- Documents: education and behavior reports, evaluations of guidance, psychological reports.

Evaluation process SWV

- The SWV assesses the level of support required.
- Experts (remedial educationalist, behavioural scientist) provide advice on additional guidance or placement.

Diagnosis decision

- The official diagnosis is made by a qualified diagnostician (remedial educationalist-generalist, mental health psychologist or child psychiatrist).
- Parents receive a diagnosis report and treatment advice (e.g. parental guidance, behavioural therapy, systemic therapy).

Placement and monitoring

- The child often remains in mainstream education with extra support (e.g. behavioural specialist, teaching assistant).
- In serious cases, special education (cluster 4) may be necessary.

Monitoring is carried out via development perspective plans (OPP), regular evaluations with the school, parents, practitioners and the SWV.

Disruptive behavior disorder diagnostic process in North Macedonia

Initial Detection in School

Teachers and school psychologists observe behaviors including:

- Frequent fighting, aggression, and defiance of rules
- Truancy, vandalism, bullying
- These behaviors are documented using standardized Behavior Observation Forms and teacher interviews.

Family Interview

- The school counseling or psychological service contacts the family to discuss:
- Behavior patterns at home (lying, aggression, destruction of property)
- Family background including history of domestic violence, neglect, or trauma.

Referral to Regional Educational-Psychological Support Center (CEPS)

- Families are referred to CEPS for a comprehensive evaluation. The assessment includes:
- WISC-IV or equivalent intelligence testing to assess cognitive abilities and rule out intellectual impairment.
- Projective tests (e.g., drawing, storytelling) to explore emotional and behavioral issues.
- Use of the Conners Rating Scale or Oppositional Defiant Disorder (ODD) Rating Scales to evaluate impulsivity, aggression, and oppositional behaviors.

Referral to Child Psychiatry Clinic

If indicated, CEPS refers the child to a child psychiatrist at a university hospital or public mental health clinic for a definitive diagnosis. Psychiatrist performs:

- Diagnostic evaluation using DSM-5 or ICD-10 criteria.
- Differential diagnosis to distinguish DBD from ADHD, ODD, post-traumatic stress disorder, or neurological conditions
- Medical tests (blood work, EEG) if neurological or medical causes are suspected.

Diagnosis and Reporting

- Once a diagnosis is confirmed, a formal CEPS Report is issued to authorize educational accommodations and supports.
- An Individualized Education Plan (IEP) or BEP is prepared outlining tailored interventions.

Treatment and Support Plan

School-Based Interventions:

- Social skills training and behavioral management with school counselors and psychologists.
- Teacher training in behavior modification and classroom management techniques.

Clinical Interventions:

- Cognitive Behavioral Therapy (CBT) focused on impulse control and emotional regulation.
- Medication (e.g., antipsychotics or stimulants) only in severe cases, prescribed and monitored by psychiatrists.

Important Notes:

- If you are insured under the Health Insurance Fund (HIF), Diagnostic and support services through CEPS and child psychiatry clinics are free of charge under public health and education systems.
- The assessment and diagnosis process generally takes 4 to 8 weeks.
- Family consent is required for all evaluations and interventions for children under 18 years.

Disruptive behavior disorder diagnosis process in Lithuania

Preliminary Screening and Referral

- **Classroom Observation:** Teachers observe students for persistent patterns of defiance, aggression, rule-breaking, or hostility toward authority figures.
- **School Counseling Service:** School psychologists or pedagogical-psychological services (PPS) conduct initial behavioral assessments and consult with parents and teachers. If DBD is suspected, a formal evaluation is initiated.

Application and Documents

Required Documents:

- Referral from a teacher or school psychologist.
- Parental consent.
- Academic and behavioral records.
- Family and developmental history.

Evaluation Process

Tests and Applications:

- A comprehensive psychiatric assessment is conducted, including:
- Interviews with the child, parents, and teachers.
- Questionnaires assessing behavior across settings (e.g., school, home).

- Review of medical, social, and academic history[2].

Special Education Assessment Board:

- A multidisciplinary team (psychologists, educators, social workers) reviews the data.
- May refer the child to child and adolescent psychiatric services for clinical diagnosis.

Diagnosis Decision and IEP Preparation

Criteria:

- Persistent pattern of behavior violating social norms or the rights of others (for CD).
- Frequent defiance, irritability, or vindictiveness (for ODD).
- Symptoms must cause significant impairment in functioning.

Individualized Education Plan (IEP):

- Developed collaboratively with parents, teachers, and specialists.
- Includes behavioral goals, support strategies, and interventions (e.g., behavior modification plans, social skills training).

Placement and Monitoring

Education Environment:

- Most students remain in mainstream classrooms with behavioral support.
- In severe cases, placement in specialized programs or therapeutic classrooms may be considered.

Monitoring:

- Regular follow-ups by school psychologists and teachers.
- IEPs are reviewed and adjusted based on behavioral progress and feedback.

Recommendations for teachers

Set Clear and Consistent Boundaries

- Define short, concrete rules such as "No physical contact in the classroom".
- Give immediate, consistent responses to rule violations (e.g., time-out).

Reward Positive Behavior Immediately

- Use specific praise such as "Thank you for giving your pen to your friend today".
- Symbolic rewards: Sticker chart, giving class responsibility.

"Time Out" Technique for Impulsive Behaviors

- Say "Take 5 deep breaths now, then let's talk".
- Use a time-out corner (as a calming area, not punishment).

Do Not Engage in Power Struggles

- Postpone by saying "We will not discuss it now, let's talk at recess".
- Avoid eye contact (may trigger defiance).

Channel Destructive Energy

- Give physical activity tasks:
- *"Could you erase the board? Could you bring a book from the library?"*

Use Peer Pressure Positively

- Design group rewards:
- *"If you don't fight as a class today, you will earn 10 minutes of free time."*

Teach Anger Management Skills

- Have them draw an "Anger Thermometer":
- *"How angry are you right now? If it's 5, what can we do?"*

Cooperate with the Family

- Send a weekly behavior chart:
- Green (good), Yellow (moderate), Red (bad) days.

Do Not Use Accusatory Language

- Instead of "Why are you doing this?":
- *"What could you do instead of this behavior?"*

Protect Yourself Too

- Physical safety precaution in the classroom:
    - Keep your desk close to the door.
    - Call the school administration in extremely aggressive situations.

Remember:
"These children are the ones who need boundaries the most, but are the least likely to have them set."

Summary

What is it?

- A continuous pattern of behavior that violates the rights of others and deliberately violates rules. Lack of empathy and impulsivity are key features.

Causes

- **Biological:** Genetics, prefrontal cortex dysfunction
- **Environmental:** Domestic violence, peer bullying, trauma

Prevalence

- In the world: %2-10
- In Turkey: %3-8 (2 times more common in men)

False Beliefs

- "It will pass with spoiling" → ✕ If left untreated, it can turn into antisocial personality disorder.

How to Recognize in the Classroom?

- Fighting, vandalism, lying
- Skipping school, deliberately disobeying rules

DSM-5 Diagnostic Criteria

- 4 main categories (aggression, property damage, fraud, serious violation of rules)
- Must last for 6 months

4 Golden Suggestions for Teachers

- Set clear boundaries
- Give instant positive feedback
- Use an "anger thermometer"
- Cooperate with the family

Visual Impairment

What is it?

Children with low vision are individuals who cannot be fully corrected with medical intervention or standard glasses, but can continue their education using their remaining visual function. Their visual acuity ranges from 20/70 to 20/400 (normal vision is 20/20). These children can adapt to the classroom environment with large-print texts, high-contrast materials, or special optical tools (magnifiers, telescopic glasses). Vision loss can develop congenitally (retinitis pigmentosa, glaucoma) or later in life (trauma, diabetic retinopathy). They may experience problems such as not being able to see the board clearly in the classroom, light sensitivity, or depth perception issues. However, with early intervention (vision therapy, adapted education), they can receive inclusive education with their peers.

What are the causes?

Biological and Environmental Factors

Genetic and Congenital Causes

- Retinitis Pigmentosa: Gradual loss of vision cells (causes tunnel vision).
- Albinism: Lack of melanin in the eye (light sensitivity and low contrast vision).
- Congenital Glaucoma/Cataract: Intraocular pressure or lens opacity.

Retinopathy of Prematurity (ROP)

- Incomplete development of retinal vessels in premature infants (especially in births under 1500 gr).

Acquired Causes

- Trauma: Blow to the eye, chemical burn (for example, as a result of an accident).
- Diabetic Retinopathy: Retinal damage due to diabetes (can be seen even in adolescents).
- Infections: Eye pressure (uveitis) or corneal infections.

Neurological Factors

- Damage in the Brain Visual Center: Cerebral palsy or as a result of birth trauma ("brain-derived visual impairment").

Environmental and Socioeconomic Factors

- Vitamin A Deficiency: Night blindness and corneal damage (malnutrition).
- Inadequate Eye Care: Lack of routine eye screening in low-income families.

Prevalence in the world and participating countries

Worldwide

- 0.5-1.2% of children and adolescents aged 5-19 (WHO, 2023)
- Mild-moderate vision loss (20/70-20/400): 18 million children
- Regional distribution:
    - 0.3-0.8% in developed countries (with early diagnosis/treatment)
    - 1.5-2% in low-income countries (vitamin A deficiency, infections)

Prevalence in Turkey

- In school-age children (6-18 years):
  - 0.7% according to official data (MEB, 2023)
  - The actual prevalence is estimated to be 1.2% (undiagnosed cases)
- According to risk factors:
  - 10 times more in premature births (7%)
  - 2 times more in regions with consanguineous marriage (1.5%)

Diagnosis Rates

- Those detected in school screenings: 35% (especially 1st and 5th grades)
- Awareness problem of families:
  - False beliefs such as "Their eyes are crossed, but they will improve over time"
  - **Rate of families who have vision screening:** 55%

Prevalence in the Netherlands

Approximately 2% of children have a visual impairment, ranging from low vision to blindness. Diagnosis is carried out by ophthalmologists and specialized institutions (Bartiméus, Koninklijke Visio). Schools work together with these institutions to provide appropriate education and aids.

Prevalence in North Macedonia

- Official data estimate approximately 0.8% of school-age children (6–18 years) have diagnosed visual impairment.
- Actual prevalence is likely higher (around 1.1–1.3%) due to undiagnosed cases, particularly in rural areas and among populations with limited access to health services.
- Risk factors increasing prevalence include Premature births (estimated 6–8%) and Regions with high rates of consanguineous marriages

Prevalence in Lithuania

A study conducted at the Hospital of Lithuanian University of Health Sciences Kauno Klinikos (2019–2020) identified 179 children with visual disabilities:

- 18.4% were blind
- 81.6% had low vision

Gender-specific data is not explicitly published, but global trends suggest slightly higher prevalence among boys in early childhood, while girls may be underdiagnosed due to subtler symptoms.

The most common causes of visual impairment were:

- **Unavoidable:** Optic nerve atrophy, retinal dystrophy
- **Avoidable:** Retinopathy of prematurity, congenital glaucoma, congenital cataract

Misconceptions (Scientific Facts)

- It will be completely corrected when wearing glasses!

Fact: Glasses only provide partial correction in people with low vision. Additional supports such as magnifiers and light adjustment may be required.

- If he squints his eyes, it means his number has increased!

Fact: Squinting may be a symptom of retinal or optic nerve diseases (e.g. glaucoma).

- His vision deteriorated because he looked at the screen too much!

Fact: Digital screens cause temporary fatigue but do not cause permanent low vision. The underlying pathology should be investigated.

- If we turn on the light, he will see better!

Fact: Some people with low vision are photophobic (albinism, retinitis pigmentosa). Dark colored filtered glasses may be required.

- "It will go away when you grow up!"

Fact: Low vision of genetic or neurological origin can be progressive (e.g., retinal dystrophies).

- He can't see, but his other senses are super developed!"

Fact: Other senses do not automatically sharpen. They can be improved with special training.

- He is not visually impaired, he is just lazy!"

Fact: The child who cannot follow the lesson because he cannot see the board is thought to be "lazy".

- He is color blind, colors are not important anyway!"

Fact: 80% of people with low vision see color. High contrast (black and white) materials work.

- If he learns Braille, his eyes will become lazy!"

Fact: Braille is a lifesaver for children with progressive vision loss.

- He cannot do sports!"

Fact: They can do adapted sports such as goalball, swimming, and athletics.

How to recognize visual impairment

7 Typical Behaviors of Low Vision Students in the Classroom

Need to Approach the Board

- Frequently wanting to go to the front of the board during the lesson
- Pasting the notebook to the board when copying from the board

Zooming in on Reading Materials

- Holding books very close to their eyes (5-10 cm distance)
- Need to enlarge the tablet/phone screen (frequent use of pinch-to-zoom)

Light Sensitivity

- Avoiding bright sunlight (request to draw the curtain)
- Squinting or shielding eyes from fluorescent light

Difficulty in Social Interaction

- Missing facial expressions (not being able to see smiles)
- Staying in the background in classroom group activities

Coordination Difficulties

- Stumbling while going up and down the stairs
- Having difficulty in ball catching/throwing activities (depth perception problem)

Missing Visual Details

- Not being able to read the faint writings on the blackboard
- Not being able to notice the fine details in the pictures (difficulty in reading maps)

Symptoms of Fatigue

- Loss of concentration at the end of the day
- Complaints of eye rubbing and headache

Visual impairment diagnosis process in the participating countries

Visual impairment diagnosis process in Turkey

Initial Suspicion and Referral

- **At school:** If the teacher notices that the child cannot see the board or reads books very closely, they report it to the guidance counselor.
- **Family doctor:** Performs basic vision screening, and refers to an ophthalmologist in case of suspicion.

Clinical Evaluation (Ophthalmologist)

- Tests:
    - Visual acuity measurement (with Snellen chart)
    - Color vision test (Ishihara test)
    - Fundus examination (retina and optic nerve control)
    - Visual field test (for peripheral vision loss)

Medical Diagnosis and Report

- **Diagnosis:** "Low vision" (visual acuity between 20/70 - 20/400)
- **Report:** A disability health board report is issued in case of 40% or more vision loss.

RAM (Guidance and Research Center) Application

- Requirements:
    - Ophthalmologist report

    - Photocopy of identity card
    - Referral letter sent from school
- Things Done at RAM:
    - Educational assessment (ability to use residual vision)
    - Preparation of IEP (Individualized Education Program)

Follow-up and Re-evaluation

- Eye examination once a year
- Educational progress evaluation by RAM every 6 months

Important Information:

- **Free Services:** RAM assessments and examinations at state hospitals are free of charge.
- **Process:** It takes an average of 2-4 weeks.
- **Rights:** Students with low vision have the right to benefit from inclusive education.

Vision impairment diagnosis process in Croatia

- In Croatia, an assessment of vision and visual functions is mandatory at the age of four. Your child's pediatrician automatically sends you for a vision assessment through the health system.
- **Those identified in school screenings -** unfortunately, very few children are recognized at school if they have minor visual impairments, because rarely does any school have an educational rehabilitator trained to work with children with visual impairments.

Initial Suspicion and Referral

- **At school:** If the teacher notices that the child cannot see the board or reads books from very close, they report it to the guidance service.
- **Family doctor:** Performs basic vision screening, refers to an ophthalmologist in case of suspicion.

Clinical Evaluation (Ophthalmologist)

- **Tests:**
    - Visual acuity measurement (with Snellen chart)
    - Color vision test (Ishihara test)
    - Fundus examination (retina and optic nerve control)
    - Visual field test (for peripheral vision loss)

Medical Diagnosis and Report

- **Diagnosis:** "Low vision" (visual acuity between 20/70 - 20/400)
- **Report:** A disability health board report is issued in case of 40% and above vision loss.

Application for “Decision on the appropriate form of education”

- Ophthalmologist report, the opinion of the school medicine doctor, the opinion and findings of the psychologist, the opinion and findings of the educational rehabilitator
- Procedures Performed when the kid gets ‘’Decision on the appropriate form of education''
    - Educational assessment (ability to use residual vision)

- IEP (Individualized Education Program) preparation
- If the school has educational rehabilitator – at least once a week work with the student

Follow-up and Re-evaluation

- Eye examination once a year to the school doctor and ophthalmologist

Rights: Students with low vision have the right to benefit from inclusive education, especially if they have major visual impairments and cannot go to a regular school, then they are educated in centers for the blind and partially sighted.

Visual impairment diagnostic process in the Netherlands

- Identification usually takes place shortly after birth through neonatal eye screening or at an early age by the health clinic and parents.
- Diagnosis is carried out by an ophthalmologist, often supplemented by examinations at specialized institutions such as Bartiméus or Koninklijke Visio.
- The examination focuses on the degree of visual impairment and its consequences for development and learning.

Application via SWV

- The school compiles a pupil file containing observations, learning outcomes and support needs.
- Together with parents, a support application can be submitted to the appropriate education SWV.
- Documents: medical statement from the ophthalmologist, report from a centre of expertise (Bartiméus/Visio), education reports.

SWV evaluation process

- The SWV assesses whether additional resources or guidance are needed for appropriate education.
- Advice is often provided in collaboration with the relevant expertise centres.

Diagnosis decision

- The medical diagnosis is made by an ophthalmologist.
- For education purposes, the support indication is confirmed by the SWV, with input from an expertise centre.

Placement and monitoring

- Many children attend mainstream education with support from ambulant counsellors from Bartiméus or Visio.
- In more severe cases, placement in special education cluster 1 (for visually impaired children) may take place.
- Monitoring takes place through periodic evaluations between the school, parents, counsellors and expertise centres.

Visual impairment diagnostic process in North Macedonia

Initial Suspicion and Referral

- **School Observation:** Teachers report signs such as difficulty seeing the board, holding books very close, or squinting.
- **Primary Health Care:** Family doctors perform initial vision screenings during routine check-ups and refer suspected cases to ophthalmologists.

Clinical Evaluation by Ophthalmologist

- Comprehensive eye examination including:
- Visual acuity test using Snellen chart
- Color vision assessment with Ishihara plates
- Fundus examination to evaluate retina and optic nerve health
- Visual field testing to detect peripheral vision loss

Medical Diagnosis and Disability Reporting

- Diagnosis of low vision or other visual impairments is based on clinical findings (e.g., visual acuity between 20/70 and 20/400).
- A formal disability certificate may be issued by the Health Disability Board when vision loss reaches 40% or more, enabling access to special educational supports.

Referral to Regional Educational-Psychological Support Centers (CEPS)

Required documents include:

- Ophthalmologist's report detailing diagnosis and visual capabilities
- Copy of student’s identity document
- Referral letter from school psychologist or principal

CEPS conducts an educational assessment focusing on:

- The student’s functional vision and ability to use residual sight in learning
- Preparation of an Individualized Education Program (IEP) tailored to visual needs

Follow-Up and Monitoring

- Annual ophthalmologic examinations to monitor eye health and vision changes.
- Educational progress and IEP implementation evaluations by CEPS at least every 6 months.

Important Notes

- Public ophthalmological assessments and CEPS evaluations are free of charge under the Ministry of Health and Education systems.
- The diagnostic and support process typically takes 2–4 weeks.
- Students with low vision have the legal right to receive inclusive education and specialized support services in North Macedonia.

Visual impairment diagnosis process in Lithuania

Preliminary Screening and Referral

- **Classroom Observation:** Teachers monitor for signs such as difficulty reading, squinting, poor hand-eye coordination, or frequent headaches.
- **School Counseling Service:** School psychologists or special educators refer students to vision screening programs or ophthalmologists if impairment is suspected.

Application and Documents

Required Documents:

- Referral from school staff
- Parental consent
- Medical records (especially ophthalmological reports)
- Academic and behavioral observations

Evaluation Process

Tests and Applications:

- Visual acuity tests (e.g., Snellen chart)
- Functional vision assessments
- Ophthalmological diagnosis confirming visual impairment

Special Education Assessment Board:

- A multidisciplinary team (including ophthalmologists, psychologists, and educators) reviews the diagnosis and determines eligibility for special education services.

Diagnosis Decision and IEP Preparation

Criteria:

- Visual acuity of 0.3 or less in the better eye (with correction)
- Significant impact on learning and daily functioning

Individualized Education Plan (IEP):

- Includes accommodations such as large print materials, assistive technology, seating arrangements, and mobility training
- Developed collaboratively with parents, teachers, and specialists

Placement and Monitoring

Education Environment:

- Most children are educated in mainstream schools with support
- Specialized schools or resource centers are available for severe cases

Monitoring:

- Regular follow-ups by school staff and vision specialists

- IEPs are reviewed and updated based on progress and changing needs

Recommendations for teachers

Front Row and Appropriate Seating Arrangement

- Seat them no more than 2 meters away from the board, in front of the light source.
- Fixed seating arrangement (do not frequently change the location of items)

Use Contrasting Materials

- Yellow/white writing on a black background (on the board and in photocopies)
- Highlight important information with colored sticky notes.

Software and Technology Support

- Provide a tablet with a magnifier application (such as ZoomText).
- Share lecture notes digitally (the student can enlarge them themselves).

Increase Verbal Explanations

- Express what you write on the board verbally at the same time.
- Always verbally define visual materials (such as, "In this graph, the blue bars...")

Make Lighting Adjustments

- Avoid bright light (seat them away from sunny window edges).
- Allow the use of individual desk lamps.

Add Tactile Materials

- Use embossed maps, three-dimensional models.
- Make important formulas stand out with textured tapes.

Make Exam Adaptations

- Enlarge the font sizes (at least 14 point).
- Provide extra time (30% of the standard time).

Provide Peer Support

- Establish a "Study Buddy System" (for sharing notes).
- Encourage them to take an active role in group studies.

Ensure Movement Safety

- Keep the classroom layout constant (do not frequently change the position of desks).
- Mark dangerous areas (top of stairs) with distinct signs.

Educate Yourself

- Try basic vision simulation applications (like VIA App).
- Participate in the Ministry of Education's "Low Vision Education" seminars.

Emergency Plan:

- In fire drills, identify a peer to guide the student.

Summary

What is it?

- Having a visual acuity between 20/70 and 20/400
- Children who cannot be fully corrected with glasses but can use their remaining vision

Causes

- Genetics (albinism, retinitis pigmentosa)
- Premature retinopathy
- Acquired (trauma, diabetic retinopathy)

Prevalence

- Worldwide: 0.5%-1.2%
- In Turkey: 0.7% (official) - 1.2% (estimated)

False Beliefs

- It gets better with glasses.
- It happened from looking at the screen.
- They are color blind, colors are unimportant.

How to Recognize in the Classroom?

- Getting too close to the board
- Sensitivity to light
- Holding materials close to their eyes

Diagnosis Process (Turkey)

- Eye doctor examination
- RAM assessment
- IEP preparation
- Device support (magnifier, tablet)

Recommendations for Teachers

- Seat in the front row
- Use contrasting materials
- Increase verbal explanations
- Add tactile materials

Note: "Remember: Students with low vision see differently, not unable to see. You can make big differences with small adjustments. Be their light!"

Hearing Impairment

What is it?

Children with mild (20-40 dB) to moderate (41-70 dB) hearing loss are individuals who can partially hear speech sounds but have difficulty communicating, especially in noisy environments (classroom, playground). These children can continue mainstream education with support such as hearing aids or FM systems. They combine lip reading and auditory cues to understand speech. Hearing loss can develop congenitally (genetic, prenatal infections) or later in life (chronic ear infections, trauma). Academically, they may show phonological awareness deficits (mixing up letters) and limited vocabulary. However, with early intervention (audiological support, speech therapy), they can receive education parallel to their peers.

What are the causes?

Genetic Factors (50-60%)

- Hereditary hearing gene mutations (such as GJB2, SLC26A4)
- The risk increases 3-5 times if there is a family history of hearing loss.

Prenatal Causes

- Infections contracted in the womb:
    - Rubella,
    - Cytomegalovirus (CMV),
    - Toxoplasma.
    - Mother's alcohol/cigarette use.

Perinatal Complications

- Premature birth (prematurity),
- Birth trauma (oxygen deficiency),
- Newborn jaundice (high bilirubin).

Postnatal Factors

- Recurrent middle ear infections (otitis media),
- Infections such as mumps, meningitis,
- Exposure to noise (loud toys, high volume with headphones).

Anatomical Factors

- Hole in the eardrum,
- Ossicle deformations (congenital stapes bone anomalies).

Prevalence in the world and participating countries

Worldwide

- Prevalence:
    - Mild (20-40 dB): 1.5-2% of children
    - Moderate (41-70 dB): 0.5-1% of children (WHO, 2023)

Prevalence in Turkey

- In school-age children (6-18 years):
  - Mild-moderate hearing loss: 1.8% (Ministry of Health, 2023)
  - 2.5-3% in regions with consanguineous marriage (Southeastern Anatolia)
- Diagnosis Rate:
  - Those detected by newborn screening: 70% (free in state hospitals),
  - Those detected in school screenings: 30% (especially 1st grade and 5th grade check-ups).

"Invisible Obstacle in Education": 40% of children with mild loss are thought to have "attention deficit" in primary school (Turkish Audiology Association, 2022).

Prevalence in the Netherlands

Approximately 1 in 1,000 children are born deaf; 2 in 1,000 children develop a severe hearing impairment at a young age. Diagnosis is made through neonatal hearing screening and follow-up examinations by ENT specialists and audiology centers. Education and support are provided by institutions such as Kentalis and Auris.

Prevalence in North Macedonia

Among school-age children (6–18 years), mild to moderate hearing loss is estimated at 1.5%–2% based on recent Ministry of Health data.

- Regions with higher rates of consanguineous marriages report slightly increased prevalence (~2.5%).
- Newborn hearing screening programs cover approximately 65–70% of births in public hospitals.
- School hearing screenings detect around 25–30% of cases, particularly in early primary grades (1st and 5th grade).
- Mild hearing loss often goes undiagnosed and may be mistaken for attention deficit issues in classrooms.

Prevalence in Lithuania

According to the Global Burden of Disease Study 2021, hearing loss affects a significant number of children and adolescents worldwide, including Lithuania. In 2021, the global prevalence rate among children under 20 was approximately 3,711 per 100,000. While Lithuania-specific gender data is limited, global trends show that boys are slightly more affected than girls, especially in early childhood. Mild hearing loss accounts for 62.1% of cases, and otitis media is the leading preventable cause.

Misconceptions (Scientific Facts)

- He hears poorly but wears a hearing aid, no problem!

Fact: Devices do not provide complete recovery. They still struggle in noisy environments (classroom, cafeteria).

- He can speak, so he can hear!

Fact: Speech develops with lip reading and residual hearing. If he says "fu" instead of "su", there is loss.

- He only hears when you speak loudly!

Fact: Loud voice impairs (distorts) speech. It is necessary to speak clearly and in a normal tone.

- This child is experiencing attention deficit!

Fact: Hearing loss can be confused with ADHD. An audiological test should be done first.

- Everything returns to normal when a hearing aid is fitted!

Fact: The device requires adaptation and therapy.

- Let him sit in the back row, it doesn't matter!

Fact: Front row and sitting close to the teacher are essential. He needs to see lips.

- It doesn't matter if there is loss in one ear!

Fact: Even a single ear loss impairs the ability to determine direction and makes it difficult to understand speech in noise.

- If he learns sign language, he will stop talking!

Fact: Sign language supports speech! It reduces communication stress.

- He has an intelligence problem because he learns late!

Fact: Hearing loss is unrelated to intelligence. Late speech is due to a lack of auditory input.

- It will get better when he grows up!

Fact: Even mild loss leads to academic and social backwardness if left untreated.

"If you don't have hearing loss, you can never guess 'how he hears'. Instead, learn HOW TO COMMUNICATE."

How to understand hearing impairment

1. Frequency of Saying "What?"

- The desire to constantly have the teacher or friends repeat themselves,
- It especially increases in the back rows and in noisy environments (after recess).

2. Using Wrong/Incomplete Words

- **Confusing similar sounds: "tapı" instead of "kapı", "farı" instead of "Sarı".**

3. Lip Reading Effort

- Focusing on the mouth of the person speaking,
- Sitting facing the light source (to see the lips better).

4. Misunderstanding Instructions

- **Mixing up multi-step directions: "Take out your notebook, open page 35, do question 2." Only doing the last part.**

5. Social Isolation

- Not participating in group discussions,
- Getting angry in games because "I was misunderstood."

6. Excessive Reaction to Sudden Sounds

- Startling at high-frequency sounds such as door slams and ringtones (hearing loss usually affects subtle sounds).

7. Fatigue/Unwillingness

- Loss of concentration at the end of the day (the brain gets tired of constantly "completing"),
- Being more unsuccessful in verbal lessons (Turkish, life science) and better in visual lessons (art, mathematics).

Teacher Test:

Try this: Gently close your ears and simulate what the student hears. Say a sentence like, "Take your bag, write the 4th question on the 3rd page in your notebook." See how much you understand!

Hearing impairment diagnosis process in the participated countries

Hearing impairment diagnosis process in Turkey

1. Initial Suspicion and Referral

- **At school:** If the teacher or guidance counselor notices symptoms such as speech delay or failure to understand instructions in the child, they inform the family.
- **Family doctor:** The child is referred for free hearing screening at 6 months, 1 year, and preschool period.

2. Audiological Evaluation

- It is carried out in state/university hospitals or private audiology centers.
- **Tests:**
    - **Audiometry:** The degree of loss is determined as mild (20-40 dB), moderate (41-70 dB), and severe (71-90 dB).
    - **Tympanometry:** Middle ear pressure is measured (ear infection is detected if present).
    - **ABR (Auditory Brainstem Response):** Objective measurement in infants and children who cannot communicate.

3. Medical Diagnosis (ENT Specialist)

- **Ear Nose Throat (ENT) doctor:**
    - Physical examination (eardrum perforation, earwax?),
    - MRI/CT if necessary (inner ear anomalies?).

4. **RAM Report and Educational Assessment**

   - **Guidance and Research Center (RAM):**
     - Prepares a "special education need" report,
     - Approves education with peers as an inclusion student.

5. **Support Devices and Training Plan**

   - **Hearing aid:** SSI/government provides it free of charge (once a year per child).
   - **FM system:** Transmits sound directly from the teacher's microphone to the child's device in the classroom (obtained with a RAM report).
   - **Speech therapy:** 1-2 sessions per week (free in state hospitals).

Hearing impairment diagnosis process in Croatia

1. **Initial Suspicion and Referral**
   - **At school:** If the teacher or guidance service notices symptoms such as speech delay or failure to understand instructions in the child, they inform the family.
   - **Family doctor:** The child is referred for free hearing screening at 6 months, 1 year, and preschool period, and again in the first grade and when they are 13 years old.
2. **Audiological Evaluation**
   - **Performed in state/university hospitals or private audiology centers.**
   - **Tests:**
     - **Audiometry:** The degree of loss is determined as mild (20-40 dB), moderate (41-70 dB), and severe (71-90 dB).

School prepares a "special education requirement" report, and then the kid gets ‘’Decision on the appropriate form of education'' and professional communication mediator.

Hearing impairment diagnostic process in the Netherlands

- Detection usually takes place shortly after birth through neonatal hearing screening (organized by the health clinic).
- In case of abnormalities, follow-up examinations are carried out by an ENT specialist and/or an audiology center.
- Diagnostics focus on the degree of hearing loss and its impact on speech and language development.

Application via SWV

- The school collects observations, learning results and the medical file.
- Parents and school submit a joint application to the appropriate educational SWV.
- Documents: medical statement (ENT specialist/audiological center), speech therapy reports, education reports.

Evaluation process SWV

- The SWV assesses the need for support and often calls in expertise from institutions such as Kentalis or Auris.
- Experts advise on additional support or facilities.

Diagnosis decision

- The official medical diagnosis is made by an ENT specialist or audiology centre.
- For education, the support indication is determined by the SWV, often with advice from a specialised centre.

Placement and monitoring

- Many children attend mainstream education with ambulatory support and aids (e.g. hearing aid, CI, FM system).
- In more severe cases, placement in special education cluster 2 (for children with hearing and/or speech-language problems) may be necessary.
- Monitoring is carried out through regular evaluations between the school, parents, support staff and the expertise centre.

Hearing impairment diagnostic process in North Macedonia

Initial Suspicion and Referral

- Teachers or school psychologists report concerns such as speech delay and difficulty following verbal instructions
- Family doctors conduct routine hearing screenings at 6 months, 1 year, and preschool age during health visits, referring suspected cases for audiological evaluation.

Audiological Evaluation

Conducted in public or university hospitals equipped with audiology units, as well as certified private centers. Tests include:

- Pure tone audiometry to classify hearing loss severity as Mild (20–40 dB), Moderate (41–70 dB) and Severe (71–90 dB)
- Tympanometry to assess middle ear function and detect infections.
- Auditory Brainstem Response (ABR) testing for infants and children unable to cooperate with behavioral tests.

Medical Diagnosis by ENT Specialist

- Ear Nose Throat (ENT) doctors perform:
- Detailed ear examination (checking for earwax blockage, eardrum status)

- Imaging studies (MRI or CT) when structural anomalies of the inner ear are suspected.

Educational Assessment and Support Authorization

- Regional Educational-Psychological Support Centers (CEPS) prepare an official Special Education Needs Report based on audiological and medical findings.
- This report authorizes access to inclusive education services and specific accommodations.

Assistive Devices and Therapy

- Hearing aids and assistive listening devices (e.g., FM systems) are provided free of charge by the Ministry of Health or related social services, with replacement or upgrades once per year.
- Speech therapy sessions are available at state clinics or specialized centers, typically 1–2 times per week, covered by the public health system.

Important Notes

- If you are insured under the Health Insurance Fund (HIF), Audiological assessments and CEPS evaluations are free of charge in the public health and education system.
- The full diagnostic and support process usually takes 3–6 weeks.
- Parental consent is required for all assessments and interventions in minors.
- Students with hearing impairments have the right to receive adapted educational services under North Macedonia's inclusive education laws.

Hearing impairment diagnostic process in Lithuania

Preliminary Screening and Referral

- **Classroom Observation:** Teachers monitor students for signs such as difficulty following verbal instructions, inattentiveness, or delayed speech development.
- **School Counseling Service:** If hearing issues are suspected, the school psychologist or special educator refers the child for a hearing screening. Lithuania follows WHO guidelines for school-age sensory screening.

Application and Documents

Required Documents:

- Referral from school staff
- Parental consent
- Medical history (especially ENT or audiological reports)
- Academic and behavioral observations

Evaluation Process

Tests and Applications:

- Conducted by a licensed audiologist and may include:
- Pure-tone audiometry
- Speech audiometry
- Tympanometry
- Otoacoustic emissions (OAE)

- Auditory Brainstem Response (ABR) for younger or non-verbal children

Special Education Assessment Board:

- A multidisciplinary team (audiologist, psychologist, special educator) reviews the diagnosis and determines eligibility for special education services.

Diagnosis Decision and IEP Preparation

Criteria:

- Hearing threshold ≥ 20 dB in one or both ears
- Impact on communication, learning, and social development

Individualized Education Plan (IEP):

- Includes accommodations such as:
- Preferential seating
- FM systems or sound amplification
- Support from a surdopedagogue (specialist for hearing-impaired children)

Placement and Monitoring

Education Environment:

- Most children are educated in mainstream schools with support.
- Specialized schools or classes are available for severe cases.

Monitoring:

- Regular audiological evaluations
- IEP reviews and adjustments
- Collaboration between school staff, audiologists, and families

Recommendations for teachers

Seat in the Front Row

- Place at a maximum distance of 2 meters + in a place that does not receive direct light.
- Must clearly see your face for lip reading.

Show Your Face While Talking

- Do not turn your back, do not chew gum (impairs lip movements).
- Prefer a short beard/mustache (mouth area should be visible).

Provide Written/Visual Support

- Write the instructions on the board (e.g., "1. Open your math notebook, 2. Page 25"),
- Use picture cards or emojis ("Now it's listening time 👂 ").

Reduce Background Noise

- Close the classroom door,

- Use chairs with rubber shoes (prevents squeaking).

Adjust Your Speech Rate

- 3-4 words per second is ideal (slightly slower than normal speed),
- Highlight key words ("This is important: The exam is on Tuesday").

Develop Student-Specific Communication Strategies

- To check understanding, say "Can you repeat what I said in your own words?",
- Do not ask "Yes/No" questions (instead of "Did you understand this topic?" ask "What did you learn about this topic?").

Encourage Peer Support

- Establish a "Study Buddy System" (a partner to help with note-taking),
- Ensure face-to-face seating in group work.

Use Different Assessment Methods

- Written/multiple-choice assessment instead of oral exam,
- Performance assignment (project, illustrated explanation).

Educate Yourself

- Learn basic sign language (like "Thank you", "Do you need help?"),
- Attend the MEB's "Inclusive Education" seminars.

Summary

What is it?

These are children with mild (20-40 dB) and moderate (41-70 dB) hearing loss who can receive inclusive education with a hearing aid/FM system. They communicate through lip reading and residual hearing.

Causes

- Genetic (50%)
- Prenatal infections (rubella, CMV)
- Recurrent ear infections
- Exposure to noise

Prevalence

- Worldwide: 1.5-2.5%
- In Turkey: 1.8% (rises to 3% in regions with consanguineous marriage)

Misconceptions

- Hears perfectly when wearing a device"
- No problem if they can speak"
- Can sit in the back row"

How to Understand in the Classroom?

- Frequently asking "What?"
- Confusing similar sounds ("door" instead of "tour")
- Effort to watch lips

5 Golden Recommendations for Teachers

- Seat in the front row
- Show your face when talking
- Use the FM system correctly
- Give written instructions
- Reduce noise

Rule:
"Hearing loss is a communication barrier, not a learning disability. We can overcome this barrier together with the right strategies."

Expressive Language Disorder

What is it?

Expressive language disorder (speech and language disorder) is the failure of a child to develop communication skills appropriate for their age. Language disorder manifests itself as a lack of vocabulary (e.g., less than 50 words at 3 years old) or difficulty in forming sentences (e.g., incomplete expressions such as "I... water... give"). Speech disorder includes articulation problems (saying "wice" instead of "rice"), stuttering, or voice quality problems (nasal speech). In pragmatic disorder, the child has difficulty initiating, maintaining conversations, or understanding body language. These problems can arise due to neurological (cerebral palsy, autism), structural (cleft lip-palate), or environmental (neglect, multilingual environment) reasons. Academic and social development can be supported with early intervention (speech therapy).

Note: Speech delays continuing after the age of 3 years absolutely require specialist evaluation.

What are the causes?

Neurological Factors

- **Cerebral palsy:** Motor control deficiency affects speech muscles
- **Autism spectrum disorder:** Difficulty in social communication and language use
- **Epilepsy (Landau-Kleffner syndrome):** Causes acquired language loss

Structural Anomalies

- **Cleft lip-palate:** Disrupts the airflow required for speech
- **Tongue-tie (ankyloglossia):** Restricts tongue movements (the sounds "l, r" are distorted)
- **Hearing loss:** Inability to learn sounds correctly ("fu" instead of "su")

Genetic Syndromes

- **Down syndrome:** Muscle hypotonia and tongue size make articulation difficult
- **Fragile X:** Rapid speech and word repetitions are observed

Developmental Factors

- **Specific language impairment:** Language development is delayed despite normal intelligence and hearing
- **Prematurity:** Neurological development delay

Environmental Factors

- **Neglect/unstimulating environment:** Not talking to the child sufficiently
- **Multilingual environment:** Confusion of more than one language before the age of 3 years
- **Screen exposure:** Passive communication delays language development

Prevalence in the world and participating countries

Worldwide:

- In preschool children (2-5 years): 5%-8% (ASHA, 2023)
    - Most common types:
        - Articulation disorder (4%)
        - Stuttering (1%)

        - Language delay (3%)
- It is seen 2 times more in boys than in girls

Prevalence in Turkey:

- According to MEB 2023 data:
    - 7% in school-age children (6-12 years)
    - Most common problems:
        - Articulation disorders (e.g., inability to pronounce the "r" sound) → 3.5%
        - Stuttering → 1.2%
        - Specific language impairment → 2.3%

Diagnosis Rates:

- Those detected in school screenings: 35%
- Rate of families applying for early intervention:
    - Under 3 years old: 15% (due to the belief that "it will go away when they grow up")
    - Over 6 years old: 60% (in the pre-school preparation process)

Important Notes:

- **"Hidden Crisis":** 40% of children with language disorders are thought to have "learning difficulties" at school.
- **Pandemic effect:** Articulation problems increased by 30% between 2020-2022 due to mask use.

Prevalence in the Netherlands

Specific Language Impairment (SLI/Developmental Language Disorder) occurs in approximately 5-7% of children. Diagnosis is carried out by speech therapists and remedial educationalists, often after referral by the school or health clinic. Treatment consists of speech therapy, sometimes in combination with support in the classroom. There are specialized schools and institutions (e.g. Auris, Kentalis).

Prevalence in North Macedonia

Based on Ministry of Health and Education data, approximately 6.5–7% of school-age children (6–12 years) show speech and language difficulties. Most common issues include:

- Articulation disorders (difficulty pronouncing certain sounds) – about 3.2%
- Stuttering – around 1.1%
- Specific language impairment – roughly 2.2%

Early intervention rates remain low, particularly for children under 3 years (~15%) due to misconceptions that speech issues will resolve spontaneously.

Prevalence in Lithuania

According to the Lithuanian Logopedists' Association, speech and language disorders are among the most common developmental challenges in Lithuanian children. While exact national statistics by gender are limited, international data suggest that boys are more frequently affected than girls.

The most common types of disorders include:

- Articulation disorders
- Developmental language disorders (DLD)

- Fluency disorders (e.g., stuttering)
- Voice disorders

Misconceptions (Scientific Facts)

- Boys speak late, it's normal!"

Fact: Although it is 2:1 more common in boys, the use of less than 50 words at the age of 3 years is pathological.

- Stuttering happens in a stressful environment, it goes away!

Fact: Stuttering is neurological, 80% genetic. Stress triggers but does not cause it.

- They will learn to talk if we let them watch TV/tablets!

Fact: Passive exposure delays language development. Interactive communication is essential.

- It gets fixed immediately if the tongue-tie (ankyloglossia) is cut!

Fact: 6-12 months of speech therapy is required after surgery.

- We should tell stuttering children to 'speak slowly' to correct them!

Fact: Such warnings increase anxiety. Modeling is more effective.

- They are not talking because they have a sibling!

Fact: Sibling presence can cause temporary regression, but 12 months+ delays are pathological.

- They are not talking because they are spoiled!

Fact: A child who cannot speak shows an effort to communicate (pointing, etc.). Complete silence is alarming.

- Using baby bottles/pacifiers does not impair speech!

Fact: Prolonged use after 3 years of age can lead to impairment in "t, d, n" sounds.

- Speech therapy is only for stuttering!

Fact: Therapy is also effective in language delay, articulation, and social communication disorders.

How to understand expressive language disorder

Speech Not Appropriate for Age

- Still using single-word expressions such as "give water" at 4 years old
- Inability to form simple sentences at 5 years old (such as "I park go")

Pronunciation (Articulation) Errors

- "r→y" ("car→cay"), "k→t" ("dog→top") substitutions
- Continuing baby talk after 4 years old

Stuttering Symptoms

- Repetitions of sounds/syllables ("b-b-b-I")
- Physical accompaniments such as eye blinking/foot tapping

Vocabulary Deficiency

- Frequently using general expressions such as "thing, this, that"
- Inability to describe concrete objects (saying "something to write with" instead of "pen")

Social Communication Difficulties

- Inability to initiate/maintain conversation
- Avoiding eye contact

Listening and Comprehension Problems

- Confusing multi-step directions
- Frequency of saying "What?", "I don't understand"

Academic Difficulties

- Delay in learning to read and write
- Confusing letters (b-d, m-n)

Expressive language disorder diagnostic criteria

In DSM 5, language and speech sound disorder are defined separately under the heading "Neurodevelopmental Disorders".

Language Disorder

Ongoing difficulties in learning and using language in its various forms (spoken, written, sign language, or other) due to specific deficits in understanding or using language, as manifested by the following:

- Reduced vocabulary (knowledge and use of words).
- Limited sentence structure (ability to put words and word endings together to form sentences based on grammatical rules).
- Impairments in discourse (ability to use vocabulary and connect sentences when describing a topic or series of events or during a conversation).

Language abilities are significantly and quantitatively below those expected for age, resulting in functional limitation in effective communication, social participation, academic or occupational performance, individually or in combination.

Symptoms begin in the early developmental period.

These difficulties are not attributable to hearing or other sensory impairment, motor dysfunction, or another general medical or neurological condition and are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay.

Speech Sound Disorder

An ongoing difficulty in producing speech sounds that impairs the intelligibility of speech or prevents the verbal communication of messages.

This disorder limits effective communication, thereby impeding social participation, school or work success, whether individually or collectively.

The symptoms started in the early stages of development.

These difficulties cannot be attributed to congenital or acquired conditions such as cerebral palsy, cleft palate, deafness or hearing loss, traumatic brain injury, another general medical condition, or a neurological condition.

Expressive language disorder diagnostic process in the participating countries

Expressive language disorder diagnostic process in Turkey

Initial Suspicion and Referral

- **At school:** If the teacher notices problems with the child's speech intelligibility, vocabulary, or fluency, they report it to the guidance service.
- **Family physician:** Performs a language development screening between the ages of 2 and 3 years (with forms recommended by TÇSB).

Application to RAM (Guidance and Research Center)

- Requirements:
  - Family and teacher observation forms
  - Child's communication samples (video/audio recording)
- Tests performed at RAM:
  - Peabody Picture-Vocabulary Test (vocabulary)
  - Ankara Developmental Screening Inventory (AGTE)
  - Articulation tests (Turkish pronunciation assessment)

Speech Therapist Assessment

- In state hospitals/universities or private centers:
  - Specific tests:
    - TİFALDİ (Turkish Expressive and Receptive Language Test)
    - Stuttering Severity Scale
  - Physical examination: Tongue tie, cleft palate control

Diagnosis and Reporting

- RAM report is prepared:
  - "Special education requirement" approval is granted.
  - The right to education as an inclusion student is recognized.
- BEP (Individualized Education Program) is created.

Support and Therapy Process

- At school:
  - 2 hours of special education support per week (by RAM)
  - Extra time and verbal expression option in exams
- In healthcare institutions:
  - 4-8 sessions of speech therapy per month (within SGY)

Follow-up and Re-evaluation

- Progress evaluation at RAM every 6 months
- Annual medical check-ups (ENT, neurology)

Important Information

- **It is free of charge:** RAM evaluations and therapy sessions in state hospitals.
- **Early intervention is critical:** Therapy between the ages of 3-6 years yields the most effective results.
- **Family education is mandatory:** Families are given a weekly home exercise program.

Expressive language disorder diagnostic process in Croatia

1. Initial Suspicion and Referral

- **At school:** If the teacher notices problems with the child's speech intelligibility, vocabulary, or fluency, they report it to the guidance service.
- **Family doctor:** Performs language development screening between the ages of 2-3 (with forms recommended by TÇSB), then the doctor gives the recommendation for speech therapist
- **Kindergarten staff:** if they notice something if off

2. If the kid goes in school and has severe speech and language disorder we can apply for ‘’Decision on the appropriate form of education''

- Requirements:
    - The opinion of a speech therapist, the opinion of a school medicine doctor, the opinion of a psychologist and the opinion of an educational rehabilitator.

4. Diagnosis

When the student gets **‘’Decision on the appropriate form of education''** the educational rehabilitator makes an individualized curriculum and the child has individualized procedures in classes.

5. Support and Therapy Process

- At school:
    - 1 or 2 hours of special education support per week if the school has speech therapist
    - Extra time and verbal expression option in exams
- In healthcare institutions:
    - 4 sessions of speech therapy per month if the hospital has speech therapist

Expressive language disorder diagnostic process in the Netherlands

- Identification usually takes place at the health clinic, at nursery or in the lower grades of primary school.
- Diagnosis is carried out by a speech therapist and, if TOS is suspected, by a specialized team (e.g. Auris, Kentalis).
- The examination consists of language and speech tests, observations and parent interviews.
- In the case of broader developmental issues, additional psychological testing may be necessary.

Application via SWV

- The school compiles a pupil file with observations, learning results and previous speech therapy reports.
- Together with the parents, a support application can be submitted to the appropriate educational SWV.
- Documents: speech therapy examination reports, education reports, evaluation of interventions provided.

Evaluation process SWV

- The SWV assesses the support request and often calls in expertise from a cluster 2 institution (Kentalis/Auris).
- Experts advise on guidance, aids and possible placement.

Diagnosis decision

- The medical/therapeutic diagnosis is made by speech therapists or specialised diagnostic teams.
- For education, the SWV determines whether a pupil is eligible for support or placement in cluster 2.

Placement and monitoring

- Many children remain in mainstream education with ambulatory support from a cluster 2 institution.
- In cases of severe SLI or speech disorders, placement in cluster 2 special education may be necessary.
- Monitoring is carried out via development perspective plans (OPP) and periodic evaluations by the school, parents, speech therapists and the expertise centre.

Expressive language disorder diagnostic process in North Macedonia

Initial Suspicion and Referral

- Teachers report concerns related to speech clarity, limited vocabulary, or fluency issues to school psychologists or counselors.
- Family doctors conduct routine language development screening at ages 2–3 during health visits, using standardized developmental checklists.

Application to Regional Educational-Psychological Support Centers (CEPS)

Submission of:

- Family and teacher observation forms
- Communication samples such as audio or video recordings of the child speaking
- CEPS performs standardized assessments including:
- Vocabulary tests adapted for Macedonian (similar to Peabody Picture Vocabulary Test)
- Developmental inventories
- Articulation assessments

Speech Therapist Evaluation

Conducted at public hospitals, university clinics, or certified private centers. Specialized evaluations include:

- Expressive and receptive language tests adapted to Macedonian language
- Fluency and stuttering severity scales
- Physical examination to check for anatomical issues (e.g., tongue tie, cleft palate)

Diagnosis and Reporting

CEPS prepares a Special Education Needs Report documenting:

- Diagnosis of speech and/or language disorder
- Eligibility for inclusive education support

An Individualized Education Plan (IEP) is developed tailored to the child's specific speech needs.

Support and Therapy

School-based supports:

- 1.5 to 2 hours per week of specialized speech-language support provided through CEPS.
- Accommodations during exams such as extra time or oral responses.

Clinical therapy:

- 4–8 speech therapy sessions per month provided in state health institutions under public health coverage.
- Family training is provided with a structured home exercise program to enhance therapy outcomes.

Follow-up and Re-evaluation

- CEPS conducts progress evaluations every 6 months to adjust the IEP.
- Annual medical follow-ups with ENT specialists and neurologists as needed.

Important Notes

- If you are insured under the Health Insurance Fund (HIF), evaluations and therapy sessions are provided free of charge through public health and education services
- Early intervention, especially between ages 3 and 6, is critical for the most effective outcomes.
- Family involvement and training are essential components of the intervention process.

Expressive language disorder diagnostic process in Lithuania

Preliminary Screening and Referral

- **Classroom Observation:** Teachers monitor students for signs such as unclear speech, limited vocabulary, difficulty forming sentences, or challenges in understanding spoken language.
- **School Counseling Service:** School-based speech-language therapists (in Lithuanian: logopedai) or psychologists conduct initial screenings. These may include informal assessments and observations of communication in classroom settings.

Application and Documents

Required Documents:

- Referral from a teacher or school psychologist
- Parental consent
- Samples of student work (e.g., writing, speech recordings)
- Medical and developmental history

Evaluation Process

Tests and Applications:

- Standardized and non-standardized tools are used to assess:
- Speech sounds
- Receptive and expressive language
- Fluency and voice quality
- Social communication skills
- Tools may include language sampling, articulation tests, and dynamic assessments.

Special Education Assessment Board:

- A multidisciplinary team (speech-language therapist, psychologist, special educator) reviews the results.
- The team determines eligibility for special education services and recommends interventions.

Diagnosis Decision and IEP Preparation

Criteria:

- Persistent difficulties in speech or language that interfere with academic performance or social interaction.
- Must not be attributable solely to other conditions (e.g., hearing loss, intellectual disability).

Individualized Education Plan (IEP):

- Developed collaboratively with parents, teachers, and specialists.
- Includes specific goals, therapy schedules, and classroom accommodations (e.g., simplified instructions, visual aids).

Placement and Monitoring

Education Environment:

- Most children with speech and language disorders are educated in mainstream classrooms.
- They receive support through pull-out sessions or in-class interventions by speech-language therapists.

Monitoring:

- Progress is tracked through regular therapy sessions and IEP reviews.
- Adjustments are made based on developmental changes and academic needs.

Recommendations for teachers

Listen Patiently, Do Not Interrupt

- "Wait for them to complete their thoughts" (5-10 second rule)
- Make eye contact and give the message "I am listening to you"

Be a Model, Do Not Correct

- Repeat the incorrect expression with the correct model by saying "Yes, you said bee!"
- Avoid saying "You said it wrong"

Form Simple and Short Sentences

- Instead of "Take out your pen, open page 25, do question 3"
- Step by step: 1) Open your book → 2) Find page 25 → 3) Look at question 3

Use Visual Support

- Picture cards (e.g., action cards: "run", "read")
- Use exaggerated gestures and facial expressions (open your arms while saying "big")

Provide Peer Support

- "Conversation Buddy" system (designate a volunteer peer in the classroom)
- Give small roles in group work (example: "You say the title of the story")

Offer Alternatives to Oral Presentations

- Written assignment, drawing pictures, or video recording options
- Relax the requirement to speak in front of the class

In Case of Stuttering...

- Ignore secondary movements such as winking or lip biting
- Instead of saying "slow down" or "take a deep breath" while speaking, model by speaking slowly yourself

Establish Classroom Routines

- 1-word answers (happy/sad) to the question "How are you feeling today?" in the morning circle
- Practice sound repetition with songs and rhymes ("A barber a beanie...")

Collaborate with Family

- Keep a weekly communication journal ("This week we worked on the 'r' sound, repeat the word 'car' at home")
- Suggest 5-minute exercises that can be done at home (e.g., "Show your tongue in the mirror while saying 'stork'")

Educate Yourself

- Learn basic articulation exercises (balloon blowing, lip smacking)
- Participate in the Ministry of Education's "Speech and Language Impairment" seminars

Summary

What is it?

- Language disorder: Difficulty with vocabulary/sentence construction (e.g., <50 words at 3 years old)
- Speech disorder: Articulation errors ("door→toor") or stuttering

Causes

- Neurological (autism, cerebral palsy)
- Structural (cleft lip-palate)

- Environmental (neglect, multiple languages)

Prevalence

- 7% in school age in Turkey
- 2 times more common in males

False Beliefs

- It will pass when he grows up
- He learns by watching TV

How to Recognize in the Classroom?

- Speech delay compared to peers
- Mixing letters (r→y)
- Inability to sustain conversation

Suggestions for Teachers

- Be a role model (do not correct)
- Use visual support
- Cooperate with the family
- Celebrate small achievements

"Every child has the right to communicate. Our mission is to be a bridge for that voice to reach the world."