

# Autism Spectrum Disorder

## Definitions, Level of Functioning & Prevalence

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Cyprus September 2024

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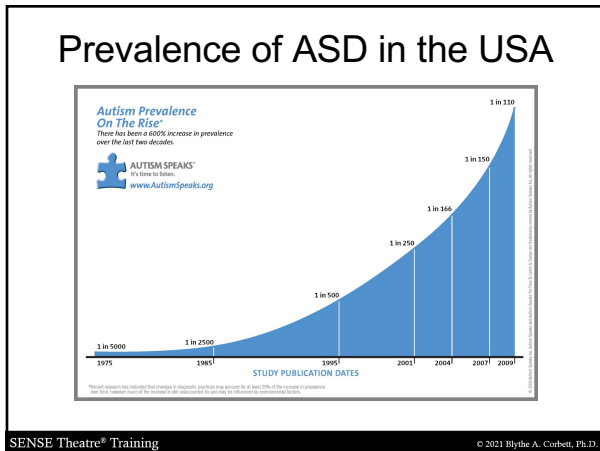
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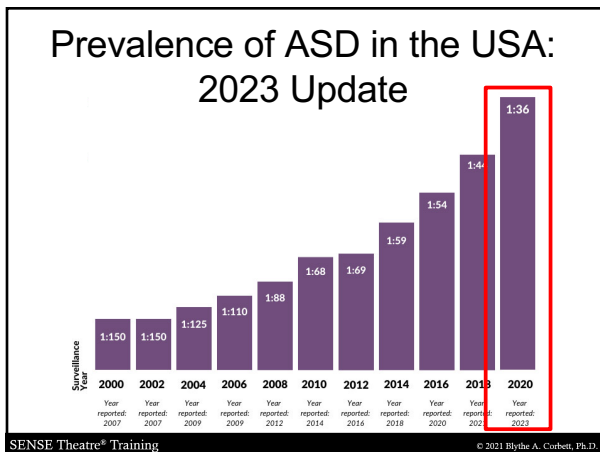
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## Prevalence of ASD Globally: 2021 Update

- 1 in 100 children diagnosed with ASD
- Male-to-female ratio of 4.2:1
- Overall increase in prevalence over time
- Estimates vary greatly across sociodemographic groups

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Advances in Neurodevelopmental Disorders  
<https://doi.org/10.1007/s41252-024-00412-2>

ORIGINAL PAPER

### The Childhood Prevalence, Gender Ratio, and Characteristics of Autism Spectrum Disorder in Cyprus Using School Report: A Cross-Sectional Study

Margarita Kilili-Lesta<sup>1</sup> · Konstantinos Giannakou<sup>1</sup> · Louiza Voniati<sup>1</sup>

Accepted: 3 July 2024

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## Childhood Prevalence ASD in Cyprus

- **Objective:** The first study to determine childhood prevalence and characteristics of ASD in Cyprus
- **Methods:** Data 5 - 12 year old children collected between February 20, 2023 – June 23, 2023
- **Prevalence:** 1.8% of children with ASD or 178 children (9990 participants from 117 schools)
- **Male:** 80% male, 4:1 gender ratio
- **Support:** 90.4% speech and 93.8% special education
- **Nonverbal/minimally verbal:** 45.5% using augmented/alternative communication (AAC) system
- **General Ed:** 47.7% receive support

Kilili-Lesta 2024

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**Table from Kilili-Lesta 2024**

**Table 5** Multiple logistic regression analysis for ASD prevalence by gender, school system, level, area, and district

School/child characteristics	Coefficient	Standard error	z value	p-value	Odds ratio	95% CI
<b>Gender</b>						
(ref=male)						
Female	-1.336	0.192	-6.957	<0.001	0.263	0.178-0.378
<b>System</b>						
(ref=general education)						
Special education	3.046	0.379	8.029	<0.001	21.041	9.941-44.259
<b>Level (ref=kind. pre-primary)</b>						
Elementary/primary	-0.738	0.172	-4.298	<0.001	0.478	0.343-0.673
<b>Area</b>						
(ref=urban)						
Rural	-0.280	0.175	-1.605	0.108	0.756	0.534-1.060
<b>District</b>						
(ref=Nicosia)						
Limasol	0.339	0.202	1.680	0.093	1.403	0.940-2.078
Larnaca	0.128	0.239	0.536	0.592	1.137	0.703-1.801
Paphos	-0.052	0.241	-0.215	0.830	0.950	0.582-1.506
Ammochostos	-0.161	0.402	-0.401	0.688	0.851	0.361-1.780

Notes: % percent, CI confidence intervals, ref reference category, NA not applicable, Kind. kindergarten

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**Cyprus ASD Prevalence - Kilili-Lesta 2024**

**Comorbidities:**

- ADHD = 37.6%
- Intellectual Disability = 10.7%
- Non-verbal/minimally verbal = 55.6%

**Identified needs:**

- Initiatives for screenings in pre-primary schools for early identification
- Tailored interventions
- Monitor prevalence via central database to facilitate service planning

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## National Strategy for Autism (NSA)

- On April 10, 2024, the Republic of Cyprus & Deputy Ministry of Social Welfare, 2024 announced the National Strategy for Autism
- Aim is to monitor incidence and prevalence
- Target years 2024-2028

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## Explanations for Increase

- Greater awareness of ASD
- Younger age at diagnosis
- Broadening of diagnostic criteria
- Improvement in availability of services
- Social factors (advanced parental age)
- True increase in ASD

([www.AutismSpeaks.org](http://www.AutismSpeaks.org))

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## ASD General

- A neurodevelopmental disorder that affects early brain development
- The specific causes are unknown
- 1 in 36 children are diagnosed with ASD by the time they are 8 years old
- 3 to 4 times more likely in boys than girls
- Diagnosis of ASD is behaviorally based
- Occurs in all racial, ethnic, and SES groups

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## Autism in Girls and Women

- Diagnosed later than boys
- Many are missed or misdiagnosed
- May be more likely to camouflage or mask autistic characteristics
- Female-typical autism presentation or “Female Autism Phenotype”
- Emerging evidence for sex differentiated behavioral profiles in social, language, and communication domains and physiological and mental health differences

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## Autism Spectrum Disorder (ASD)

### DSM-5 Criteria

- **Social Communication**
  - Social emotional reciprocity
  - Nonverbal communication
  - Developing and maintaining relationships
- **Restricted Repetitive Patterns of Behavior, Interests, or Activities**
  - Stereotyped or repetitive movements
  - Insistence on sameness
  - Restricted, fixed interests
  - Hyper- or hypo-reactivity to sensory stimuli

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## Autism Spectrum Disorder

- Autism is a heterogeneous disorder.
- Can present with a range of strengths and challenges.
- The diagnostic manual describes three levels of functioning based on the amount of support needed.

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### Level 1 Requires Support

- Difficulty with social communication and interaction, and inflexible behavior.
- Treatment will help address these symptoms and provide ongoing support,
- Reading social cues and navigating social situations
- Self-regulation

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### Level 2 Requires Substantial Support

- Strong narrow interests
- Distress managing change or new situations
- Accommodations for learning
- Support with social interactions
- Speech therapy
- Occupational therapy

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### Level 3

#### Requires Very Substantial Support

- Minimally verbal or nonverbal language
- May prefer less social interaction
- Stereotyped and repetitive behaviors
- Same support as level 2 but more comprehensive
- Schedules
- AAC, PECs may be used

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### Adaptive Functioning

- Age-appropriate behaviors necessary for people to live independently and to function safely and appropriately in daily life.
- Real life skills: **daily living** (*cleaning, money management*), **social skills** (*making friends*), **community use** (*leisure*), **occupational** (*ability to work*), and **personal responsibility for age** (*hygiene, grooming*).

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### SOCIAL

#### Qualitative impairment in social interaction

- Differences in the use of non-verbal behaviors
- Difficulties developing appropriate peer relationships
- Reduced spontaneous sharing of enjoyment, interests, or achievements
- Challenges social or emotional reciprocity

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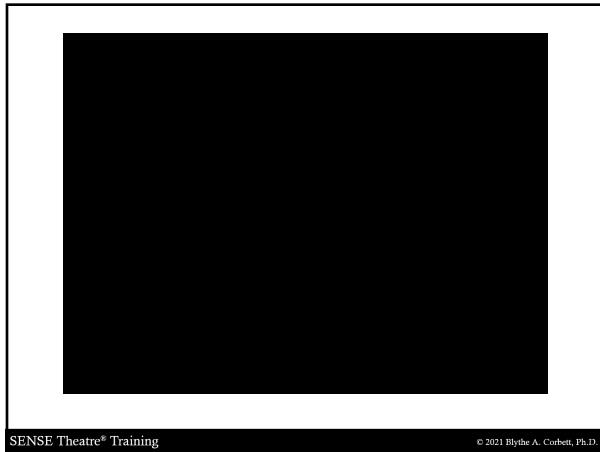
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## COMMUNICATION

Qualitative impairment in communication

- Delay or lack of spoken language
- Difficulties initiating or sustaining conversation (in those with speech)
- Stereotyped, repetitive, idiosyncratic use of language
- Repetitive play and reduced spontaneous make-believe or imitative play

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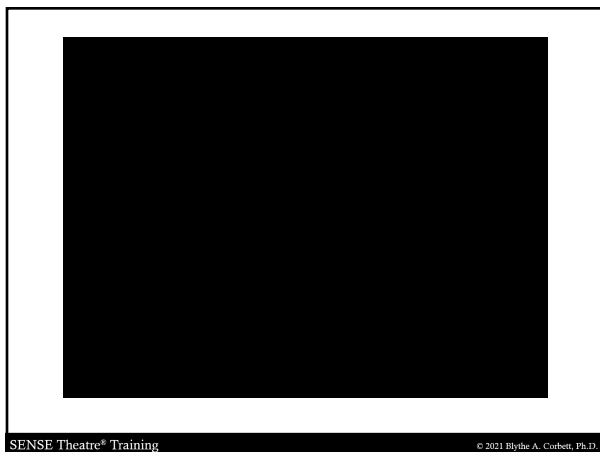
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## REPETITIVE BEHAVIOR

Restrictive, repetitive and stereotyped patterns of behavior, interests, and activities

- Preoccupation with interest – atypical in intensity or focus
- Non-functional routines or rituals
- Stereotyped motor mannerisms
- Preoccupation with parts of objects

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## Social Difficulties Experienced by Students with Autism

### ■ Social Reciprocity

- Initiating, maintaining, and terminating social interactions
- Making and keeping friends

### ■ Emotional Reciprocity

- Interpreting and expressing emotions
- Exhibiting shared enjoyment
- Theory of mind/perspective taking

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### Social Difficulties Experienced by Students with Autism

- Using eye contact to regulate social interactions
- Using gestures and appropriate body language to supplement social interactions
- Exhibiting appropriate voice intonation, quality, rate, and volume
- Exhibiting and reading facial expressions
- Understanding unspoken social rules
- Reading complex and changing social cues

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### Circumscribed Interests in Students with Autism

- Very strong and narrow focus on particular topics
- Interest in topics that are unusual for age
- Difficulty “letting go” of special topics or activities
- Excellent memory for details of special interests

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### Repetitive Behaviors

- Wants to perform certain activities in an exact order
- Becomes distressed and upset if routines or rituals not followed
- Needs advanced warning of any change
- Perseverates or “gets stuck” on an activity

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## Stereotyped Behaviors

- Hand flapping
- Flicking fingers or objects in front of eyes
- Hand posturing or repetitive movements
- Spinning or rocking
- Body tensing

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## Sensory Sensitivities

May be sensory **averse** or **sensation seeking**, which may include:

- Auditory aversions
- Tactile defensiveness
- Taste/texture of food
- Visual sensitivity or seeking
- Smell
- Pain and temperature

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## Capitalize on Strengths in ASD

- Visual learners
- Excellent rote memory
- Motivated by special interests
- Consistency
- Repetition
- Attention to detail
- Concrete thinkers
- Unique perspective

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