

# Diagnosis of Autism Occurring Earlier in Children, Though Still Late for Many; Initial Diagnosis in Adulthood Increasing in Women

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## Key Findings

- The median age at autism diagnosis declined slightly from 7 years of age in 2015 to 6 years in 2024. Male patients are increasingly diagnosed earlier with the median age at diagnosis dropping from 7 years in 2015 to 5 in 2024. However, the median age for females remained near 8 years over the same period.
- Of male patients diagnosed with autism in 2024, 44% were under age 5. In that same year, 34% of diagnosed females were under age 5, indicating more than half of patients were diagnosed later than age 5 and might have benefitted from earlier diagnosis.
- The proportion of female patients diagnosed as adults (ages 19+) was 25% in 2024, while 12% of males were diagnosed with autism as adults in the same year.

Early diagnosis of autism spectrum disorder (ASD) is necessary to ensure patients receive early intervention services. National guidelines emphasize screening in early childhood, particularly before school entry.<sup>1</sup> Changes introduced in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) in 2013, which redefined ASD as a spectrum and eliminated separate categories such as Asperger's syndrome, have likely influenced diagnostic practices.<sup>2</sup> Despite these guidelines, the American Academy of Pediatrics notes that adherence to universal screening recommendations for ASD remain low.<sup>3</sup>

To understand trends in ASD diagnoses over time, we studied 338,415 patients with a pattern of established care who received their first ASD diagnosis between 2015 and 2024. We found that the overall average age at ASD diagnosis remained stable at around 10.5 years, while the median age decreased from 7 in 2015 to 6 in 2024. When the average is higher than the median, it typically reflects a small but significant group being diagnosed much later, potentially into adulthood, which pulls the average upward.

Among male patients, diagnoses are increasingly occurring earlier, with the median age at diagnosis dropping from 7 to 5 and the average age dropping from 10.2 to 9.2 over the study period. In contrast, the median age for female patients has stayed consistent at about 8 years, while the average age at diagnosis increased from 11.7 years in 2015 to 13.1 years in 2024.

## Age at Autism Diagnosis Over Time

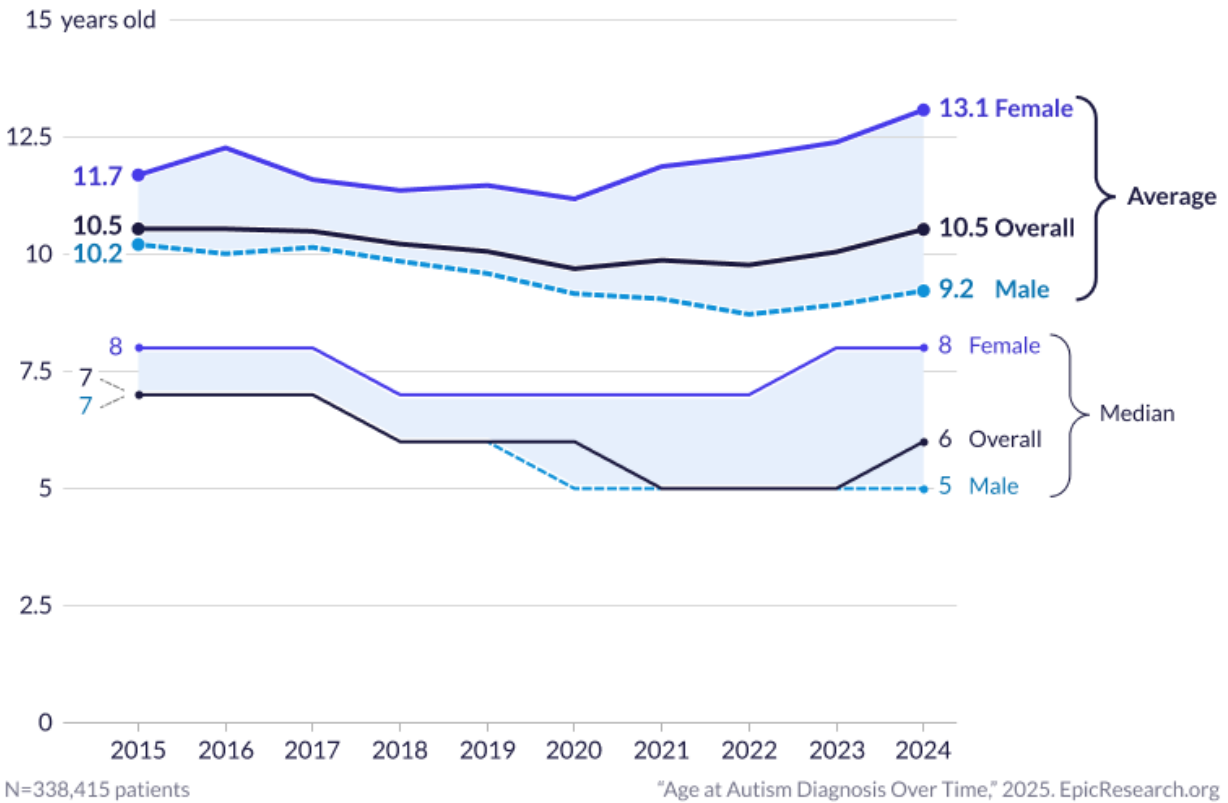


Figure 1. The average and median age at diagnosis of autism in 2015 through 2024 by sex.

We then examined the age distribution at the time of autism diagnosis. Early detection has become more common among male patients, with 44% diagnosed before age 5 in 2024, compared to 34% of females. In contrast, nearly one in four female patients with ASD were diagnosed as adults (age 19 or older), more than double adult diagnoses among males (12%). More than half of both males and females were diagnosed after age 5 and might have benefitted from earlier diagnosis.

## Distribution of Age at Autism Diagnosis over Time

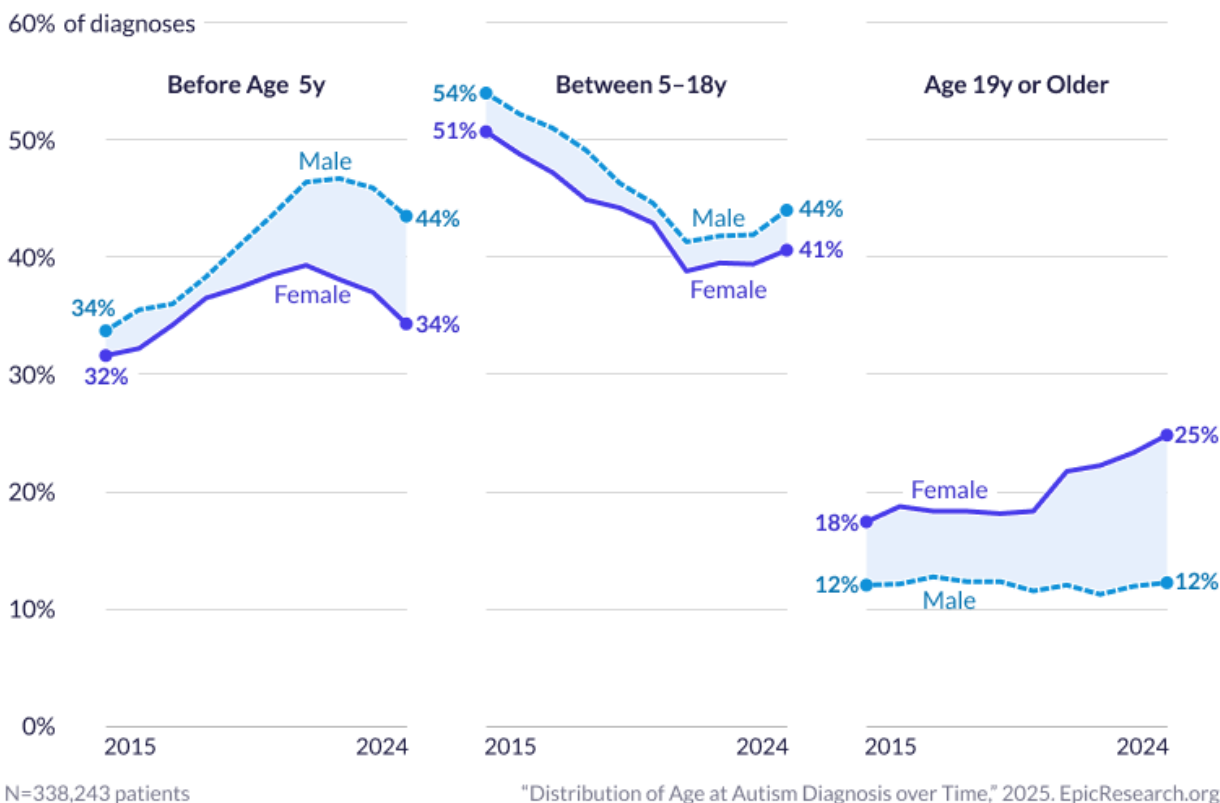


Figure 2. The distribution of the age at the time a patient is diagnosed with autism in 2015 through 2024 by sex.

These findings underscore ongoing improvements in early childhood autism detection, particularly for boys, while highlighting a parallel rise in adult diagnoses among women. Persistent differences in age at diagnosis by sex suggest that symptom presentation and screening continue to differ in males and females.

*These data come from Cosmos, a dataset created in collaboration with a community of Epic health systems representing more than 300 million patient records from 1,700 hospitals and more than 40,000 clinics from all 50 U.S. states, Lebanon, and Saudi Arabia. This study was completed by two teams that worked independently, each composed of a clinician and research scientists. The two teams came to similar conclusions. Graphics by Brian Olson.*

## References

1. Lipkin PH, Macias MM; COUNCIL ON CHILDREN WITH DISABILITIES, SECTION ON DEVELOPMENTAL AND BEHAVIORAL PEDIATRICS. Promoting Optimal Development: Identifying Infants and Young Children With Developmental Disorders Through Developmental Surveillance and Screening. *Pediatrics*. 2020;145(1):e20193449. doi:10.1542/peds.2019-3449
2. Hyman SL, Levy SE, Myers SM; COUNCIL ON CHILDREN WITH DISABILITIES, SECTION ON DEVELOPMENTAL AND BEHAVIORAL PEDIATRICS. Identification, Evaluation, and Management of Children With Autism Spectrum Disorder. *Pediatrics*. 2020;145(1):e20193447. doi:10.1542/peds.2019-3447
3. McCarty P, Frye RE. Early Detection and Diagnosis of Autism Spectrum Disorder: Why Is It So Difficult?. *Semin Pediatr Neurol*. 2020;35:100831. doi:10.1016/j.spn.2020.100831

## Data Definitions

Term	Definition
Study period	2015 to 2024
Study population	<p>Patients with a new diagnosis of <b>autism</b>, their earliest non-problem list diagnosis where:</p> <ul style="list-style-type: none"> <li>• They had a prior outpatient face-to-face visit without an autism diagnosis</li> <li>• They had at least two encounters in the last three years</li> <li>• The first diagnosis occurred in an outpatient face-to-face visit</li> </ul> <p>Exclusions:</p> <ul style="list-style-type: none"> <li>• A problem list <b>autism</b> diagnoses prior to their first encounter/billing diagnoses of <b>autism</b></li> </ul>
Outcomes	Autism: A diagnosis with ICD-10-CM code F84.0 or F84.5
Stratifications	<p>Legal sex</p> <p>Age group (in years):</p> <ul style="list-style-type: none"> <li>• Under 5</li> <li>• 5 to 18</li> <li>• 19+</li> </ul>

**Table 1: Age at Autism Diagnosis Over Time**

	Age (years)									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Overall Average	10.5	10.5	10.5	10.2	10.1	9.7	9.9	9.8	10.0	10.5
Overall Median	7	7	7	6	6	6	5	5	5	6
Female Average	11.7	12.3	11.6	11.4	11.5	11.2	11.9	12.1	12.4	13.1
Female Median	8	8	8	7	7	7	7	7	8	8
Male Average	10.2	10.0	10.2	9.8	9.6	9.2	9.0	8.7	8.9	9.2
Male Median	7	7	7	6	6	5	5	5	5	5

**Table 2: Distribution of Age at Autism Diagnosis over Time**

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
0-4y Female	32%	32%	34%	37%	37%	39%	39%	38%	37%	34%
0-4y Male	34%	36%	36%	38%	41%	44%	47%	47%	46%	44%
5-18y Female	51%	49%	47%	45%	44%	43%	39%	40%	39%	41%
5-18y Male	54%	52%	51%	49%	46%	45%	41%	42%	42%	44%
19+y Female	18%	19%	18%	18%	18%	18%	22%	22%	23%	25%
19+y Male	12%	12%	13%	12%	12%	12%	12%	11%	12%	12%