

Number of ADHD Patients Rising, Especially Among Women

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Key Findings:

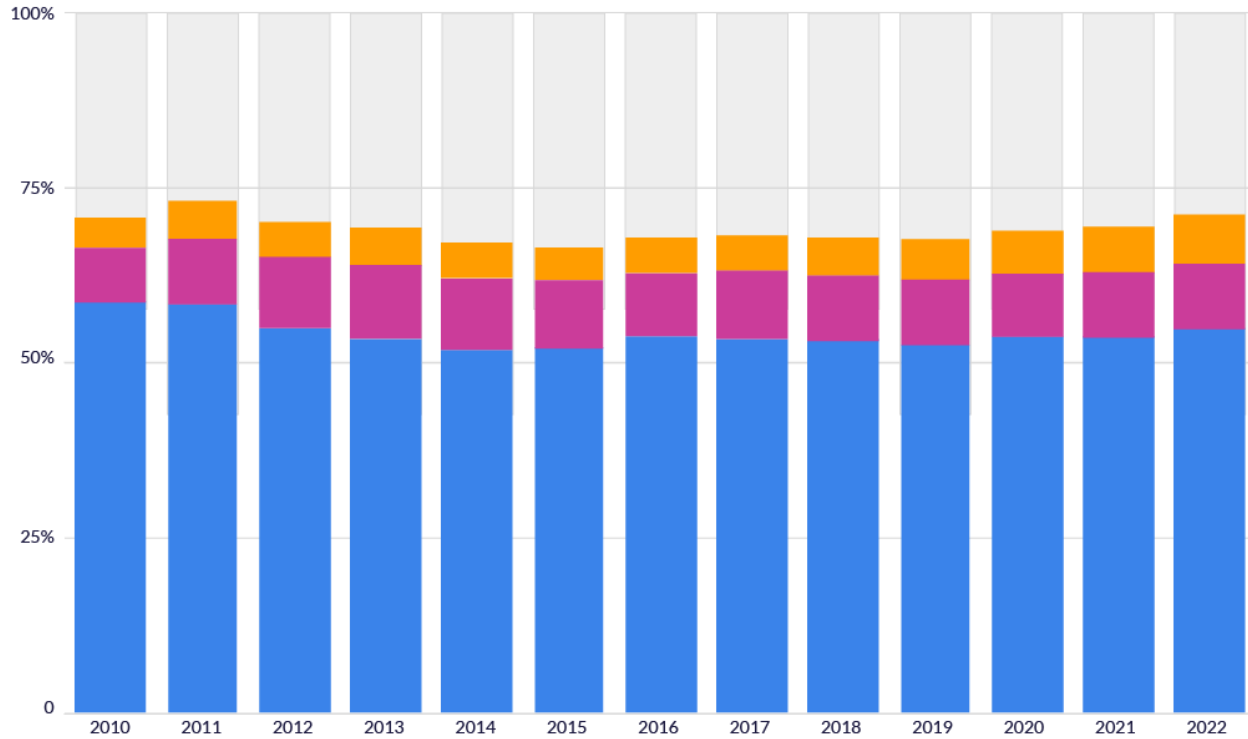
- The proportion of ADHD patients with a stimulant prescription has stayed between 61 and 64% since 2013, down from a high of 68% in 2011.
- New diagnoses of ADHD have risen in recent years across all age groups.
- The percentage of women newly diagnosed with ADHD between 23–29 and 30–49 years of age nearly doubled from 2020 to 2022.

Recently, there have been reports of an increase in the number of prescriptions for stimulant medications, such as Adderall, for the management of attention-deficit hyperactivity disorder (ADHD).^{1,2} The Drug Enforcement Agency (DEA) of the United States has also proposed changes restricting the prescribing of stimulant medications in telehealth encounters, as those types of medications are considered a controlled substance in the U.S.³ Non-stimulant ADHD medications are not considered controlled substances and are therefore not impacted by the DEA's proposed changes. However, they are not as widely prescribed as stimulant ADHD medications.

To better understand how ADHD medication prescribing has changed over time, we analyzed 3,389,383 patients diagnosed with ADHD from 2010 through 2022. We sought to understand whether there was a change in the proportion of patients with ADHD who were prescribed medications to manage their symptoms. Our data show 61–64% of patients with ADHD diagnoses were prescribed stimulant ADHD medications, and that percentage has remained fairly consistent since 2013. The percentage of those with ADHD prescribed a stimulant ADHD medication has decreased from 68% in 2011. The percentage of patients with only non-stimulant ADHD medications prescribed hovered at 5% from 2011 to 2017 but increased slightly to 7% in 2021 and 2022.

Proportion of Patients with ADHD with Stimulant and Non-Stimulant Prescriptions

n=3,389,383 ● Stimulants Only ● Both Stimulant and Non-Stimulant Prescriptions ● Non-Stimulants Only ● No Prescriptions



"Proportion of Patients with ADHD with Stimulant and Non-Stimulant Prescriptions," 2023. EpicResearch.org

Figure 1. Proportion of patients with ADHD with prescriptions for stimulant and non-stimulant ADHD medications annually from 2010 to 2022.

While the proportion of patients prescribed medications for ADHD has remained consistent, the incidence of ADHD in our study population has tripled since 2010, from 0.19% of patients to 0.57% of patients in 2022. The most marked increase is seen from 2020 to 2022.

ADHD Diagnoses Over Time

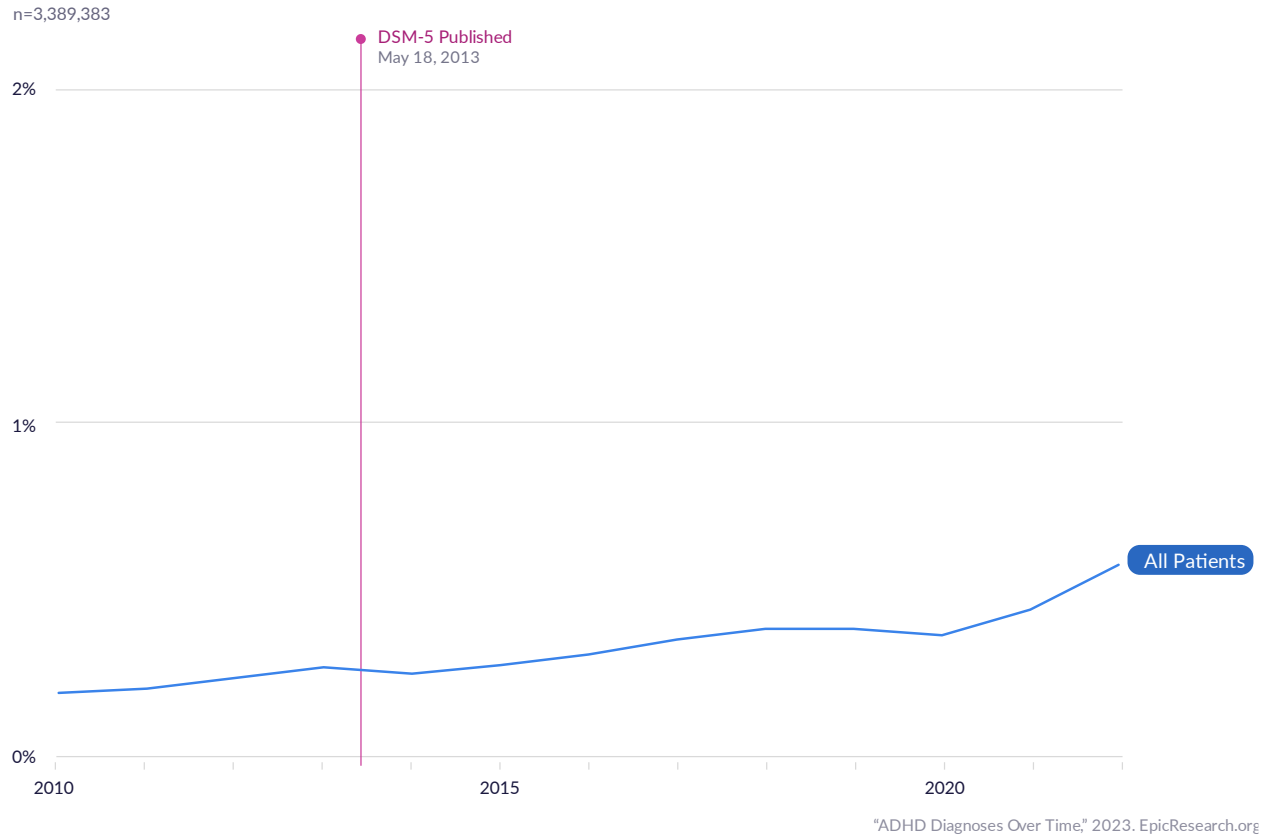


Figure 2. Incidence of patients with initial ADHD diagnosis by year. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), updated diagnostic guidelines for ADHD.

However, this increase in incidence varies when stratified by age, as shown in Figure 3, with patients ages 6-11 most likely to be diagnosed. Even though the overall incidence of ADHD remains small in the adult population, the incidence in the 30–49-year-old group nearly doubled from 0.34% in 2020 to 0.64% in 2022.

Age at Initial ADHD Diagnosis Over Time

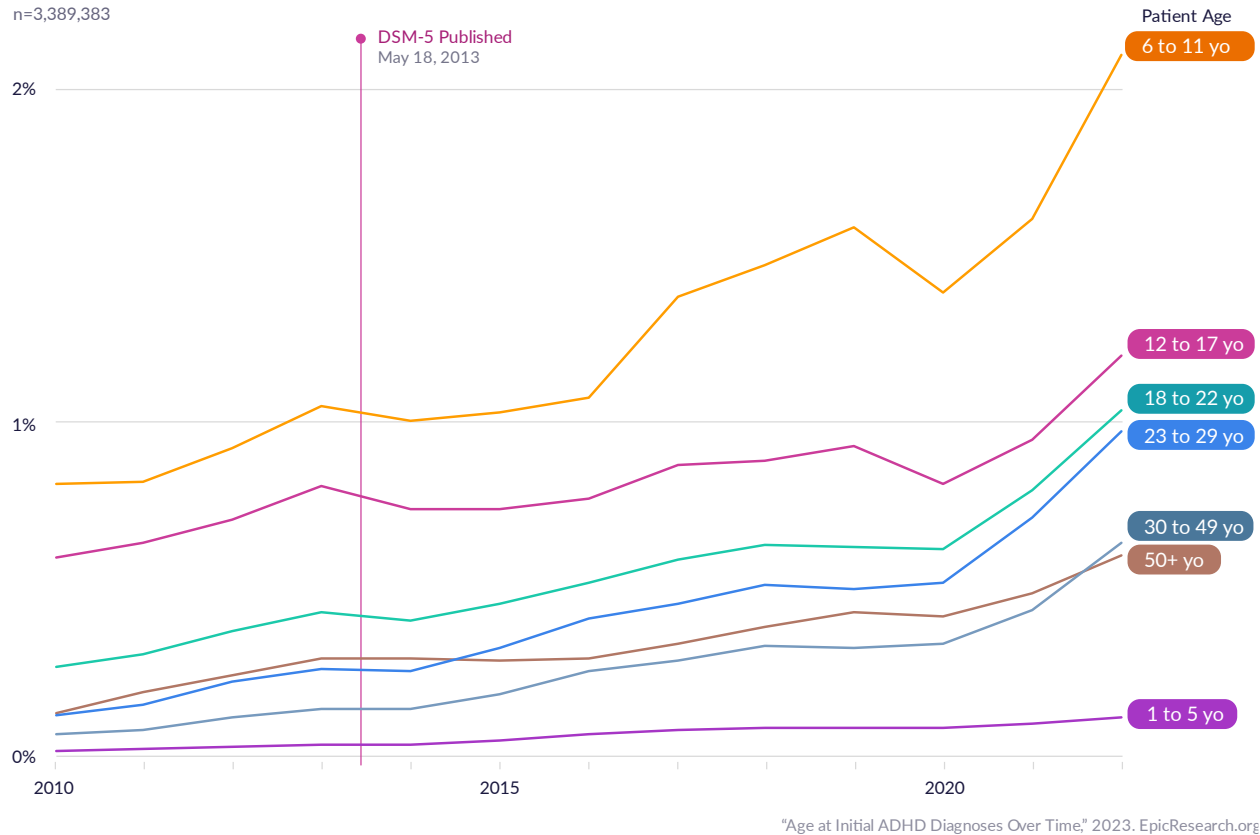


Figure 3. Incidence of patients with initial ADHD diagnosis by year stratified by age. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), updated diagnostic guidelines for ADHD.

Much of the increased incidence in the adult age groups can be attributed to increases in new diagnoses for females. The incidence of ADHD diagnosis in the 23–29-year-old and 30–49-year-old female populations nearly doubled from 2020 to 2022. This supports previous findings that females tend to be diagnosed with ADHD later in life than males.⁴

While males remain more likely to be diagnosed with ADHD than females, the disparity has decreased over the past 12 years. The ratio of males to females diagnosed with ADHD decreased nearly five-fold during that time, from males being 133% more likely to be diagnosed with ADHD than females in 2010 to 28% more likely to be diagnosed with ADHD in 2022.

These findings suggest that an increase in the number of stimulant medication prescriptions is likely driven by the increase in new ADHD diagnoses, rather than new prescriptions for those who have previously been diagnosed with ADHD.

These data come from Cosmos, a HIPAA-defined Limited Data Set of more than 183 million patients from 193 Epic organizations including 1,119 hospitals and more than 24,700 clinics, serving patients in all 50 states and Lebanon. 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.

References

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3. DEA Announces Proposed Rules for Permanent Telemedicine Flexibilities. www.dea.gov. <https://www.dea.gov/press-releases/2023/02/24/dea-announces-proposed-rules-permanent-telemedicine-flexibilities> Accessed March 10, 2023.
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Data Definitions

Term	Definition
ADHD / ADD Diagnosis	Any diagnosis mapped to ICD-10-CM code F90*
ADHD Stimulant Medications	The following medications: <ul style="list-style-type: none"> • methylphenidate • methylphenidate HCl • dexmethylphenidate HCl • dextroamphetamine sulfate • dextroamphetamine/amphetamine • dextroamphetamine • serdexmethylphen/dexmethylphen • lisdexamfetamine dimesylate • pemoline • amphetamine • amphetamine sulphate
ADHD Non-Stimulant Medications	The following medications: <ul style="list-style-type: none"> • atomoxetine HCl • clonidine HCl • clonidine • guanfacine HCl • viloxazine HCl
Initial ADHD Diagnosis	The first ADHD / ADD Diagnosis for a patient. The patient must have at least one Face to Face Encounter prior to the diagnosis event.
Incidence of ADHD	The number of patients with an Initial ADHD Diagnosis in a given year divided by the number of patients with a qualifying Face to Face Encounter in that year.
Face to Face Encounter	An encounter with any of the following types: Allied Health, Ancillary procedure, Anticoagulation visit, Appointment, Audiology, Case management, Clinical support, Confidential, Diagnostic services, Education, Emergency, Fetal care consult, Follow-up, Genetics, Home care visit, Hospice F2F visit,

Hospital, Hospital encounter, Immunization, Induction, Infusion, Initial prenatal, Injection, Lactation consult, Lactation encounter, Multidisciplinary visit, NST, Nurse only, Nursing home, Nutrition, Office visit, Oncology survivorship, Ophth exam, Occupational/Physical therapy, Postpartum visit, Procedural consult, Procedure visit, Radiology appointment, REI, Research encounter, Routine prenatal, Sleep study, Social work, Speech therapy, Surgery, Surgical consult, Transplant evaluation, Transplant follow-up, Treatment, Urgent care, Walk-in, or Well child.

Table 1: Percentage of ADHD Patients Prescribed Medications Associated with ADHD

Year	ADHD Patients	No Meds	Stimulant Only	Non-Stimulant Only	Both Meds	Any Stimulant
2010	66,507	29%	59%	4%	8%	67%
2011	111,654	27%	58%	5%	10%	68%
2012	186,425	30%	55%	5%	10%	65%
2013	255,256	31%	53%	5%	11%	64%
2014	299,790	33%	52%	5%	10%	62%
2015	371,170	34%	52%	5%	10%	61%
2016	474,214	33%	54%	5%	9%	62%
2017	705,536	32%	53%	5%	9%	62%
2018	851,812	32%	53%	6%	9%	63%
2019	970,188	32%	52%	6%	9%	62%
2020	1,022,996	31%	54%	6%	9%	63%
2021	1,208,529	30%	54%	7%	9%	63%
2022	1,364,212	29%	55%	7%	9%	64%

Table 2: Percentage of Active Patient Onset ADHD Within Year

Year	ADHD Incidence
2010	0.190%
2011	0.198%
2012	0.232%
2013	0.263%
2014	0.247%
2015	0.268%
2016	0.304%
2017	0.350%
2018	0.377%
2019	0.382%
2020	0.360%
2021	0.435%
2022	0.570%

Table 3: Percentage of Pediatric Age Groups with Onset ADHD Within Year

Year	1-5 Patients	1-5 Males	1-5 Females	6-11 Patients	6-11 Males	6-11 Females	12-17 Patients	12-17 Males	12-17 Females
2010 Rate	0.128%	0.185%	0.064%	0.819%	1.142%	0.473%	0.595%	0.822%	0.376%
2011 Rate	0.194%	0.280%	0.097%	0.822%	1.134%	0.488%	0.641%	0.894%	0.397%
2012 Rate	0.242%	0.346%	0.124%	0.926%	1.272%	0.556%	0.711%	0.977%	0.457%
2013 Rate	0.295%	0.421%	0.153%	1.047%	1.444%	0.626%	0.809%	1.105%	0.526%
2014 Rate	0.291%	0.413%	0.154%	1.008%	1.385%	0.610%	0.739%	0.996%	0.498%
2015 Rate	0.289%	0.412%	0.151%	1.033%	1.418%	0.627%	0.741%	1.004%	0.497%
2016 Rate	0.296%	0.425%	0.153%	1.074%	1.469%	0.660%	0.773%	1.037%	0.527%
2017 Rate	0.339%	0.487%	0.174%	1.376%	1.882%	0.844%	0.872%	1.159%	0.605%
2018 Rate	0.388%	0.555%	0.202%	1.475%	2.025%	0.902%	0.888%	1.176%	0.622%
2019 Rate	0.430%	0.613%	0.226%	1.586%	2.174%	0.976%	0.928%	1.213%	0.666%
2020 Rate	0.421%	0.586%	0.238%	1.390%	1.862%	0.903%	0.819%	1.000%	0.654%
2021 Rate	0.488%	0.682%	0.273%	1.610%	2.128%	1.074%	0.947%	1.056%	0.846%
2022 Rate	0.605%	0.850%	0.333%	2.101%	2.798%	1.381%	1.203%	1.360%	1.060%

Table 4: Percentage of Adult Age Groups with Onset ADHD Within Year

Year	18-22 Patients	18-22 Males	18-22 Females	23-29 Patients	23-29 Males	23-29 Females	30-49 Patients	30-49 Males	30-49 Females	50+ Patients	50+ Males	50+ Females
2010 Rate	0.27%	0.36%	0.21%	0.12%	0.14%	0.11%	0.07%	0.07%	0.07%	0.02%	0.02%	0.02%
2011 Rate	0.31%	0.41%	0.23%	0.15%	0.19%	0.13%	0.08%	0.08%	0.08%	0.02%	0.02%	0.02%
2012 Rate	0.38%	0.49%	0.30%	0.23%	0.27%	0.20%	0.12%	0.12%	0.11%	0.03%	0.03%	0.03%
2013 Rate	0.43%	0.57%	0.33%	0.26%	0.31%	0.23%	0.14%	0.14%	0.14%	0.04%	0.03%	0.04%
2014 Rate	0.40%	0.52%	0.32%	0.26%	0.32%	0.22%	0.14%	0.14%	0.14%	0.04%	0.03%	0.04%
2015 Rate	0.46%	0.59%	0.36%	0.32%	0.39%	0.28%	0.19%	0.19%	0.18%	0.05%	0.04%	0.05%
2016 Rate	0.52%	0.65%	0.42%	0.41%	0.49%	0.36%	0.25%	0.26%	0.25%	0.07%	0.06%	0.07%

2017 Rate	0.59%	0.73%	0.49%	0.46%	0.53%	0.41%	0.29%	0.28%	0.29%	0.08%	0.07%	0.08%
2018 Rate	0.64%	0.79%	0.52%	0.51%	0.59%	0.46%	0.33%	0.33%	0.33%	0.09%	0.08%	0.09%
2019 Rate	0.63%	0.78%	0.52%	0.50%	0.58%	0.45%	0.33%	0.33%	0.32%	0.08%	0.08%	0.09%
2020 Rate	0.62%	0.72%	0.55%	0.52%	0.59%	0.48%	0.34%	0.34%	0.34%	0.08%	0.07%	0.09%
2021 Rate	0.80%	0.82%	0.78%	0.71%	0.73%	0.70%	0.44%	0.42%	0.46%	0.10%	0.08%	0.11%
2022 Rate	1.04%	1.13%	0.98%	0.98%	1.03%	0.94%	0.64%	0.62%	0.66%	0.12%	0.10%	0.13%