

Could it be ADHD?

Recognising ADHD in youth and adults

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Attention deficit hyperactivity disorder (ADHD) is a neurodevelopmental disorder that starts in childhood and continues into adulthood in most cases. Many young people and adults with ADHD remain undiagnosed and significantly impaired by their symptoms particularly problems with day-to-day responsibilities. GPs are well placed to identify patients with ADHD and refer for specialist treatment. Effective treatment can be life changing.

KEY POINTS

- Attention deficit hyperactivity disorder (ADHD) is a common and serious mental disorder, associated with a twofold increase in mortality rate and significant impairment in quality of life.
- ADHD is associated with substantial mental and physical comorbidities, and much stigma.
- ADHD runs in families and affects the whole family unit.
- Patients often describe treatment with stimulant medication as being 'life changing'.
- Effective treatment decreases mortality and comorbidities, and improves quality of life.
- The risk of stimulant dependence is very low with careful prescribing.



Most healthcare professionals poorly understand attention deficit hyperactivity disorder (ADHD) despite it being one of the most widely researched mental disorders. Half of adults with ADHD have sought help from mental health professionals, yet four out of five of those who present for treatment are not identified as having ADHD.¹ ADHD is a persistent neurodevelopmental disorder characterised by difficulties with inattention, hyperactivity and impulsivity. The heritability of ADHD is about 79% (similar to that for height), so ADHD typically affects several family members.²

Sceptics commonly claim that the symptoms of ADHD are observable in most people. However, they fail to acknowledge that ADHD is only diagnosed if the severity of symptoms causes significant impairment in everyday activities. We 'all have a bit of ADHD', but most of us are not persistently disabled by it. There are claims that all of us are likely also to perform better if we take stimulant medication. Although many of us may detect a slight improvement in performance, adults with ADHD often describe stimulant medication as 'life changing'.

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Contrary to common belief, ADHD is not just a disorder of childhood. At least 40 to 50% of children with ADHD will continue to meet criteria in adulthood, with ADHD affecting about one in 20 adults.^{3,4} ADHD can be masked by many comorbid disorders that GPs are typically good at recognising such as depression, anxiety and substance use (Table 1). In patients with underlying ADHD, the attentional, hyperactive or organisational problems pre-date the comorbid disorders and are not episodic as the comorbid disorders may be. GPs are encouraged to ask whether the complaints are of recent onset or longstanding. Collateral history can be helpful for developing a timeline of symptoms (e.g. parent or partner interview, comments in school reports). Diagnosis of underlying ADHD in these patients will significantly improve their treatment outcomes, general health and quality of life.

GPs who are familiar with their patients play a crucial role in helping to detect this often hidden disorder and to make an appropriate referral to a specialist. In the longer term, the GP is also well placed to continue ongoing management and prescription of stimulant medication once stabilised by the psychiatrist. This article will assist GPs to better identify ADHD in their adolescent and adult patients and to optimise their assessment, referral and long-term management in general practice.

What does ADHD look like in an adult?

The common problems experienced by people with ADHD are experienced by all of us, but not in the same volume and not to the same level of occupational and social impairment. These common problems, although not necessarily being *DSM-5* diagnostic criteria,⁵ are clinically useful observations to bear in mind when assessing for the possibility of ADHD.

- Problems with day-to-day responsibilities – for example, difficulty completing household chores effectively, cleaning and household maintenance, monitoring children’s homework or planning family holidays.
- Being forgetful and appearing unreliable – for example, not turning up for appointments, losing track of belongings and prescriptions/referrals, forgetting important dates, or leaving doors or windows unlocked.
- Difficulties with time management and prioritising – for example, chronically running late for work and other commitments, double booking, overcommitting or focusing on less important activities at the expense of more important ones.
- Difficulty managing finances – for example, paying bills on time, managing the household budget, completing tax returns, paying off debt and saving money for future needs.
- Lack of planning and life goals, or having ambitions but no effective strategy or commitment to achieving the desired goals.

TABLE 1. PREVALENCE OF COMORBID DISORDERS IN ADULTS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER⁴

Disorder	Prevalence
Any anxiety disorder	47%
Any mood disorder	38%
Social anxiety disorder	29%
Specific phobia	23%
Bipolar disorder	19%
Major depression	18%
Any substance disorder	15%
Post-traumatic stress disorder	12%

- Relationship problems – for example, not pulling their weight at home, not listening, not doing what they say they are going to do, fighting over impulsive spending, leaving chores half finished, getting bored in a relationship, blurting out inappropriate comments.
- Occupational problems – for example, taking longer than anticipated to complete studies or dropping out once parental support is wound back, academic or workplace underachievement or inconsistency, history of frequent job loss or change, or career frustration or boredom.
- Emotional dysregulation and distress – for example, chronic feelings of stress, frustration, guilt or anxiety, feeling overwhelmed, often leading to depression, anger outbursts or low self-esteem.
- Persistent problems with procrastination – for example, leaving things to the last minute, chronic and disabling task avoidance, failure to follow through on planned activities.
- Motivational problems despite desiring a particular outcome – for example, difficulty getting started, difficulty persisting if the task is boring or unrewarding.
- Behavioural and circadian sleep problems⁶ – for example, longstanding difficulty falling asleep due to an overactive mind at bedtime, resisting having a healthy bedtime routine, staying up too late on devices or unfinished work, delayed sleep phase with difficulty waking in the morning, not explained by sleep apnoea, restless legs syndrome or other sleep disorders.
- Problems with substance use (both stimulants and depressants) are common and often secondary to impulsivity, risk-taking behaviour, poor concentration and self-medication of insomnia – for example, caffeine or energy drinks, nicotine, alcohol, illicit substances (e.g. marijuana). Substance misuse can cause attentional problems but in ADHD the ADHD symptoms were

1. BEHAVIOURS AND PRESENTATIONS IN PATIENTS WITH POSSIBLE ATTENTION DEFICIT HYPERACTIVITY DISORDER

- Failing to attend an appointment or turning up late or on the wrong day
- Losing their prescriptions and referrals
- Poor compliance with medication, especially for multiple daily doses
- Poor compliance with referrals and tests
- Failing to undertake routine preventive health checks such as Pap smears
- Presenting after having unprotected sex, possibly with a pregnancy or sexually transmitted disease scare
- University students requesting medical certificates to get extensions of assignments
- Reporting feeling overwhelmed or procrastinating a lot
- May be overly talkative or lose focus and ask you to repeat things
- Shifting repeatedly in seat or jiggling legs
- Drinking excessive quantities of caffeine or energy drinks or excessive smoking of cigarettes
- Smoking marijuana to slow their mind and get to sleep
- Poor sleep routine, e.g. staying up too late on work nights or often on screens
- Failing to pay their medical bill (if private billing)
- Leaving their belongings behind in the practice, losing their wallet or credit card and poor budgeting

present before the substance use.

- Problems stemming from impulsivity – for example, excessive internet shopping, gaming, porn addiction or gambling losses.
- Problems with driving – for example, car accidents, frequent fines, loss of licence, driving under the influence, forgetting to renew registration or insurance on time or failing to maintain vehicle.

Recognising possible ADHD in your patients

An assessment for ADHD may start before the patient enters the room. Patients who are chronically late or forget to turn up would trigger a red flag. A GP's keen observation skills, and hopefully long-standing knowledge of their patients, may identify some behaviours and presentations that suggest the presence of ADHD, particularly if there is a cluster of such behaviours (Box 1). A life transition (e.g. moving from year 11 to year 12, being promoted at work, getting married, having a baby) may increase cognitive and executive function demands to a point where ADHD symptoms become significantly more problematic, leading to the person feeling overwhelmed and seeking help.

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Assessing for ADHD

In a patient with suspected ADHD, a brief rating scale such as the six-item Adult ADHD Self-Report Screening Scale for DSM-5 (Box 2) is quick to administer and score.⁵ A score of 14 or above detects about 84% of cases of ADHD in the general population with a false-positive rate of about 10%. The slightly longer Adult ADHD Self-Report Scale (ASRS-v1.1) Symptom Checklist is another good option that GPs might ask patients to fill in during a long consultation, or at the end of the consultation if the session is short.⁸ Feedback can be provided at a follow-up appointment. Patients with ADHD often forget to return paperwork so it is best to ask them to complete the scale in the waiting room before they leave the

2. ADULT ATTENTION DEFICIT HYPERACTIVITY DISORDER SELF-REPORT SCREENING SCALE FOR DSM-5⁷

Each question is rated on a scale of 0 to 4: never = 0; rarely = 1; sometimes = 2; often = 3; very often = 4.

- How often do you have difficulty concentrating on what people are saying to you even when they are speaking to you directly?
- How often do you leave your seat in meetings or other situations in which you are expected to remain seated?
- How often do you have difficulty unwinding and relaxing when you have time to yourself?
- When you are in a conversation, how often do you find yourself finishing the sentences of the people you are talking to before they can finish them themselves?
- How often do you put things off until the last minute?
- How often do you depend on others to keep your life in order and attend to details?

Reproduced with permission from *JAMA Psychiatry*.⁷

practice. These scales are not diagnostic but are a helpful guide to assessment.

If a patient scores 14 or more on the six-item screening scale, feedback should be provided and enquiries made about any history suggestive of ADHD in childhood.

- Was ADHD ever suggested or diagnosed in your childhood?
- Did you rely too heavily on parental support to remain organised?
- Did your parents ever do your homework for you or sit with you to get it done?
- What sorts of comments did teachers make in school reports and parent-teacher interviews?
- Do you feel you have persistently had problems reaching your potential?
- Do any family members have ADHD?
- Some medical conditions might lead to symptoms that mimic ADHD.

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3. HIDDEN COSTS TO SOCIETY OF UNTREATED ATTENTION DEFICIT HYPERACTIVITY DISORDER

- Higher rates of incarceration
- Double the rate of mortality and higher rates of injury
- Increased vulnerability to other mental disorders and trauma such as substance use disorders, post-traumatic stress disorder, anxiety disorders, sexual assault or car accidents
- Greater probability of relationship and family breakdown
- Higher rates of unemployment, underemployment and school or university dropout

Appropriate screening for the following disorders, where clinically indicated, may be helpful in some cases before conducting further assessment:

- obstructive sleep apnoea
- iron-deficiency anaemia
- vitamin B₁₂ and folate deficiency
- malabsorption problems (e.g. coeliac disease)
- petit mal epilepsy
- severe substance dependence
- head injury (neuropsychological assessment can be helpful here).

It is important not to rule out ADHD simply because other disorders have already been identified.

It is important to recognise that many mental and physical health problems can cause difficulties with attention, impulsivity, hyperactivity and organisation, but these conditions are often episodic or later in onset, unlike ADHD which is present from childhood and persistent. ADHD can co-occur with any *DSM-5* disorder and typically does – ADHD rarely occurs on its own (Table 1). It is important not to rule out ADHD simply because other disorders have already been identified.

TABLE 2. MEDICATIONS FOR ATTENTION DEFICIT HYPERACTIVITY DISORDER AND TYPICAL DOSING

Medication	Initiation	Dose
Immediate-release methylphenidate	5 to 10 mg in the morning the first day; add a second dose of 5 to 10 mg at lunch time for a week; then add further increments weekly	Total dose typically varies between 10 mg/day and 60 mg/day Doses of more than 80 mg/day are uncommon (maximum recommended dose in the NICE guidelines is 100 mg/day) ¹¹ Transition to longer-acting formulations can occur after a month
Extended-release methylphenidate	18 or 36 mg/day taken once daily in the morning	Increase in 18 mg increments to a maximum of 72 mg/day Adjust dosage at weekly intervals
Long-acting methylphenidate	20 mg/day taken once daily in the morning	Adjust dose weekly in 10 mg increments Dose usually would not exceed 60 mg/day
Dexamfetamine	2.5 to 5.0 mg in the morning the first day; add a second dose of 2.5 to 5.0 mg at lunch time for a week; then add further increments weekly	Total dose typically varies between 5 mg/day and 30 mg/day Doses over 40 mg/day are uncommon (maximum recommended dose in the NICE guidelines is 60 mg/day) ¹¹
Lisdexamfetamine	30 mg in the morning the first day; increase up to 70 mg according to response	Dose range typically 30 to 70 mg/day
Atomoxetine	For those weighing less than 70 kg, start at 0.5 mg/kg taken once daily for three days then increase to 1.2 mg/kg once daily in the morning or as evenly divided doses in the morning and late afternoon/early evening. For those weighing more than 70 kg, start at 40 mg/day taken once daily for three days then increase to target dose of 80 mg ³	Target dose 80 mg/day Maximum dose 100 mg ³

There are many patients whose anxiety and depression improves once any underlying ADHD is treated. Treating underlying ADHD improves the treatment of comorbid conditions and quality of life. It can be time consuming to tease apart a patient's developmental history and the often wide array of presenting symptoms

when ADHD is suspected, so a series of longer consultations should be scheduled. The Canadian Attention Deficit hyperactivity Disorder Resource Alliance (CADDRA) guidelines are an excellent source of information for GPs who wish to increase their assessment skills in ADHD.⁹

4. WHERE TO FIND A SPECIALIST WHO TREATS ADULTS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER

- Royal Australian and New Zealand College of Psychiatrists: www.ranzcp.org
- Australian Clinical Psychology Association: www.acpa.org.au
- Australian Psychological Society: www.psychology.org.au
- National ADHD Helpline for all referral advice: (02) 9889 5977 (Tuesday to Thursday)

How is ADHD treated?

Current treatment guidelines suggest that the mainstay of treatment for moderate-to-severe ADHD in adults is stimulant medication, either methylphenidate or dexamfetamine.⁹⁻¹² Statistics from the Pharmaceutical Benefits Scheme in 2015 indicate that the rate of prescription of ADHD medication in adults is vastly lower than the prevalence of the disorder in the adult population: 0.1 to 0.5% of the adult population received a prescription for an ADHD medication yet the prevalence of ADHD in adults is about 4 to 5%.¹³ ADHD in adults is far from being overdiagnosed and overtreated. There are high costs to the individual and our society when ADHD remains untreated (Box 3).

The good news is that most patients respond well to stimulant medications. For patients who are unable to tolerate stimulant medication, do not find it effective or have substance misuse issues, a nonstimulant medication may be trialled. In some cases, a combination of stimulant and nonstimulant medication may be helpful (Table 2).

In most states of Australia, medications to treat ADHD can only be initiated and altered by a psychiatrist, paediatrician or neurologist. Not all psychiatrists are familiar with treating ADHD in adults so it may be helpful to compile a list of local psychiatrists who are ADHD-aware (Box 4). For patients who are adamant that they will not consider medication, referral to an

ADHD-aware clinical psychologist may be helpful. Here, patients can learn cognitive behavioural strategies to better manage the symptoms of ADHD, as well as access the full array of psychological treatments needed to manage the comorbid mental health disorders and low self-esteem that frequently accompany ADHD. Best practice would typically include optimising medication; psychological therapy for ADHD and comorbid presentations; maintaining healthy sleep, exercise and dietary patterns; and maintaining social, educational and occupational supports (Box 5). It is also important to be aware of the potential role of coaches who have accredited training in ADHD coaching (contact National ADHD Helpline [Box 4]), who are specifically trained to teach organisational strategies such as time management, diarising, prioritising and goal planning. Neurofeedback has become popular in recent times, but at this stage there is not enough evidence of efficacy to warrant referral.¹⁴ Neurofeedback is unlikely to do any harm but in the absence of solid evidence of efficacy, and the high monetary and time cost, it is not part of a

5. FEATURES OF OPTIMAL TREATMENT OF ADULTS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER

- Psychoeducation
- Optimising medication
- Optimising sleep, exercise and diet
- Learning organisational skills
- Treatment of comorbid disorders and self-esteem issues
- Couples or family therapy
- Disability support services at university or TAFE

standard treatment protocol.

A patient who has a good response to medication will typically report the following changes:

- feeling calmer (not more stimulated as may be expected)
- finding it easier to concentrate ('The noise went away and the lights went on. It slows your mind down and allows you to concentrate on one thing at a time')
- better able to get started on tasks and complete them ('Instead of doing

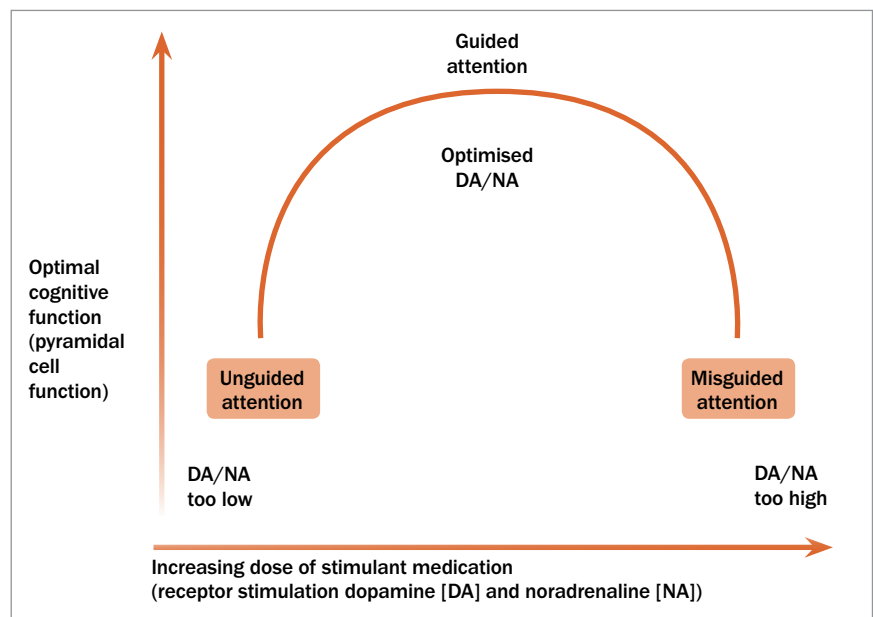


Figure. Inverted U-shape curve of dose response to stimulant medication.

Adapted from Stahl S. *Essentials of Psychopharmacology Online*. Cambridge: Cambridge University Press; 2015.

6. CASE SCENARIO 1

Tanya is a 23-year-old third-year commerce/law student who is in her fifth year of full-time study due to multiple subject failures. She often obtains extensions for her essays due to chronic procrastination and feeling overwhelmed, and frequently works all night to get work in on time. During her school years, her mother and teachers kept track of her work to keep her on task, but she has struggled since leaving school in the face of decreased oversight. She often smokes marijuana at night to get to sleep, and admits to buying dexamfetamine from friends to help her cram for exams. Tanya has come for an STD check and completion of a special consideration form for a late assignment at university. She acknowledges a high frequency of unprotected sex and has occasionally obtained a morning after pill. She is not clinically depressed and lives in the family home.



Key points for assessment and treatment

- GP conducted STD screen and education
- Screened for ADHD (Box 2) and the result was positive
- At follow-up appointment (long consultation), school reports were viewed and psychoeducation was provided for marijuana use and ADHD. A psychiatrist referral was accepted.
- Referral made to Disability Support Service at her university

Outcome

One year later Tanya is taking lisdexamfetamine and melatonin, is no longer seeking extensions, no longer uses marijuana to get to sleep, and has started a steady relationship. The psychiatrist referred Tanya back to the GP for ongoing management and prescription of lisdexamfetamine.

Once a patient has been stabilised on medication for ADHD, the psychiatrist may refer the patient back to the GP for ongoing prescribing

What is the GP's role in the management of ADHD?

GPs are ideally placed to identify potential cases of ADHD among their adult patients and to refer them to specialists as needed. They can determine whether cardiovascular (or other) examinations or investigations are warranted, anticipating treatment with stimulant medication. In fit healthy adolescents or younger adults without a medical or family history of cardiovascular disease, it is not necessary to routinely perform investigations such as an ECG. Routine baseline blood pressure, pulse rate and weight are recommended. In those patients with cardiovascular disease or other medical problems, it is worth ensuring they are medically fit to have stimulant medication. GPs can also take an active role in psychoeducation about ADHD and help decrease stigma for these patients.

It helps to remind patients that ADHD is not all bad. ADHD is associated with being more spontaneous and adventurous and it may be that explorers or entrepreneurs are more likely to have ADHD. People with ADHD are often big picture people and may be better at lateral thinking.

GPs can reinforce the importance of developing healthy sleep-wake behaviours, obtaining adequate exercise and good nutrition. These are the building blocks on which other treatment is based. For patients who are taking stimulant medication, it is helpful if the GP continues to monitor their blood pressure given that stimulant medication may cause elevation. Once a patient has been stabilised on medication for ADHD, the psychiatrist may refer the patient back to the GP for ongoing prescribing in line

- the things I want to do I do the things I need to do')
- easier to get going in the morning ('Gives me the motivation to do things')
- better able to listen to, and absorb, conversations
- easier to remember things
- less restless when sitting still
- improved mood and less anxious
- more amenable to using psychological strategies
- 'I feel like I was fractured, now I'm whole.'

It is very important that the dosage of medication is individually optimised. An analogy may be made with getting the right pair of glasses – you need the right

prescription for your particular presentation with not too much correction and not too little (Figure). The optimal dose typically requires careful titration by a psychiatrist with ADHD expertise. Multiple follow-up appointments are usually required to maximise the treatment outcome. It is essential that the benefits of treatment outweigh any negative effects.

Common side effects of stimulant medication may include:

- appetite suppression
- insomnia
- palpitations and increased heart rate
- feelings of anxiety
- dry mouth and sweating

Some sample case scenarios are provided in Boxes 6 and 7.

7. CASE SCENARIO 2

Ray is a 39-year-old self-employed plumber, married with two children of primary school age, living in a regional town. He used to be a big drinker, but ceased after his first child arrived, and smokes cigarettes. His wife made him attend for a medical check-up because she is fed up with him – he forgets to invoice customers or finalise quotes, takes on more jobs than he can reasonably handle, is constantly misplacing and losing expensive tools, is on the verge of losing his drivers licence due to multiple speeding tickets during work hours, is irritable with the children and has never been good at helping with chores around the house. He has hypertension but forgets to take his medication.



Key points for assessment and treatment

- GP reviewed blood pressure
- Screened for ADHD (Box 2) and depression and the results of both screens were positive
- Psychoeducation provided
- Referral made to a psychiatrist who provides teleconsultation
- Antidepressant medication initiated and local psychologist referral given
- Be mindful that ADHD is highly heritable and may also affect Ray's children; this possibility should be flagged with Ray and his wife.

Outcome

Ray responded well to the antidepressant medication and psychology sessions, but the problems at work and home continued. The psychiatrist started treatment with stimulant medication. Ray's concentration and on-task behaviour improved, he became quicker at invoicing and completing quotes, and lost fewer tools. He also felt calmer and was more attentive to household needs. With psychological support he worked on time management and organisational skills, developed a system for remembering to take his antihypertensive medication, ceased speeding and improved his exercise, diet and sleep. Couples counselling was also of value, especially after Ray's 11-year-old son was diagnosed with ADHD. After stabilisation on medication, the psychiatrist referred Ray back to the GP for ongoing management and prescription of stimulant medication.

with state-based guidelines.¹⁵ However, in most states and territories, the GP is not granted permission to alter the dose.

Conclusion

ADHD is a common disorder that responds very well to treatment with stimulant medication. Initiation of treatment requires referral to a specialist but long-term management may be returned to the GP. The involvement of clinical psychologists is helpful for assisting patients to cope more effectively with their disorder, and for treating comorbid conditions. ADHD coaches can help address deficits in organisational skills.

ADHD is a rewarding disorder to diagnose and treat due to its high response rate to stimulant medication and the beneficial impact of greater self-awareness and self-acceptance. GPs

play an important role in helping to identify ADHD in their patients and to assist them to obtain life-changing treatment. By talking about ADHD, referring patients for treatment and managing the continuation of prescribing, GPs are also well placed to help reduce the stigma regarding this treatable and common condition. **MT**

References

A list of references is included in the online version of this article (www.medicinetoday.com.au).

COMPETING INTERESTS: Ms Sumich has received sponsorship from Shire for travel, accommodation and dinners to attend various ADHD educational meetings. Dr Morgan is on the Shire national and international advisory boards for Vyvanse (lisdexamfetamine dimesilate), has received speaker honorarium from Shire, is a past consultant for Janssen-Cilag (Concerta) with regards to their ADHD training program for health professionals and is on the Eli Lilly Advisory Board for Strattera (atomoxetine).

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