

Should Patients Be Evaluated for ADHD While Using ADHD Medication?

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Abstract

Psychologists often perform evaluations on patients who are already being prescribed stimulant medication for ADHD. The evaluation may be sought to confirm the diagnosis, or to determine specific treatment or accommodation needs. In these cases, psychologists are often asked whether the patient should take their medication as prescribed on the day of the evaluation. There does not appear to be any existing authoritative guidance on this question, and different clinics and clinicians have different policies. In the present article, relevant research on stimulant effects and ADHD assessment tools is reviewed, to develop empirically informed guidance for determining when patients should take their medication on evaluation day and when they should not. The article concludes with several proposed guidelines for practice, synthesizing findings from the available research with consideration of psychologists' ethical responsibilities.

Keywords: ADHD, diagnostic assessment, stimulant medication

Public Significance Statement

Psychologists are often faced with the decision of whether to ask patients to take prescribed ADHD medication when getting evaluated for ADHD. This paper reviews the available research evidence on this point to help develop evidence-based recommendations for the decision.

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Consider Tyler, a sixteen-year-old boy being evaluated for attention-deficit/hyperactivity disorder (ADHD) by a clinical psychologist. Tyler's pediatrician already screened him and suspects that ADHD is likely present. Due to concerns over declining grades that had led to tension between Tyler and his parents, the pediatrician immediately initiates a trial of Focalin (dexamethylphenidate), 5mg twice a day. By the time that the psychologist can see him, Tyler has been taking the medication for 4 weeks. The day before the evaluation, Tyler's mother calls and asks whether he should take Focalin as usual the morning of the evaluation. How should the psychologist respond?

Patients undergoing evaluation for ADHD are often already taking ADHD medication. Sometimes, as in Tyler's case, a tentative or "soft" diagnosis is made and medication is started before a full evaluation can be scheduled. Other times, a patient with a prior diagnosis is undergoing re-evaluation to determine whether ADHD has remitted over time—a reasonable question, given the variable rates of persistence of ADHD into maturity (e.g., Caye et al., 2016). In still other cases, the primary purpose of the evaluation is to determine whether disability accommodations are needed (e.g., additional testing time on the SAT), and ADHD symptoms are measured in a patient who already has the diagnosis, as part of the basis for a potential recommendation for accommodations by the evaluator (Lovett & Nelson, 2021). Finally, there are cases where the patient at least occasionally uses stimulant medication without a prescription (obtained from friends or elsewhere; e.g., Benson et al., 2015) and is now seeking a formal diagnosis.

The issue of medication status during evaluations is complex, raising a number of questions such as: When is there value in assessing a patient's functioning while they are

benefiting from medication? To what degree do stimulants affect a patient's performance and behavior during the evaluation? How important is the evidence of symptoms displayed during the evaluation anyway, as opposed to reports and records of symptoms in real-world settings? Could asking that a patient not take medication during the evaluation lead to withdrawal effects, exaggerating the degree of the patient's true baseline impairment?

Given the thorny nature of these interrelated questions, it is perhaps not surprising that at present there appears to be no consensus on whether patients should take medication on evaluation day. We were unable to find direct recommendations on the issue in clinical handbooks and similar sources for use by diagnosticians (e.g., Barkley, 2015; Marshall et al., 2021; Owens et al., 2020; Ramsay, 2015; Schonwald, 2020; Sparrow & Erhardt, 2014). Moreover, when we conducted an informal internet search for guidelines from clinics and clinicians, we found conflicting information. For instance, one major university-affiliated clinic advises parents to administer medication as prescribed to their child on the day of the evaluation (Columbia University Department of Psychiatry, n.d.), whereas a large children's hospital strongly prefers that the child *not* be on medication (Cincinnati Children's Hospital, n.d.). One group practice warns that if a patient takes medication on the day of the evaluation, they may need to be rescheduled (Finger Lakes Psychiatry, n.d.), and another large hospital advises parents to check with staff before deciding whether to administer medication that day (Children's National, n.d.).

In the present article, we review relevant research literature to derive practical recommendations for clinical use. Throughout the article, we focus on *stimulant* medications, which are by far the most common medications used to treat ADHD and which have effects and mechanisms of action that are well understood. Relatively small proportions of patients take

nonstimulants for ADHD, and those patients have generally already tried stimulants, making it unlikely that they would be taking the medication as part of an initial trial prior to a comprehensive evaluation.

We begin with a brief review of how stimulants affect measures used in psychological evaluations for ADHD: various cognitive tests and observed behavior in analogue settings (such as evaluation settings). We then turn to literature on how quickly stimulants act in the brain, how long their actions continue, and how long-term use changes their effects. We then cover research on the value of evaluation session behavior and performance, relative to other data, when assessing possible ADHD. Finally, we offer concrete recommendations for assessment practice based on all of the research discussed.

Stimulant Effects on Clinical Assessment Data

Many assessment tools reference a patient's behavior outside of the evaluation setting; interviews and behavior rating scales, for instance, usually ask about behavior over a lengthy period (e.g., the past six months) or else ask about the patient's "typical" behavior. Even though these measures are likely affected by medication usage and should be interpreted in that context, they do not lead to any decision points about whether a patient should take medication during the evaluation itself. In contrast, two types of evaluation measures are based on the patient's behavior *on evaluation day*: cognitive tests, and measures of clinician-observed ADHD symptoms (such as motor hyperactivity).

Stimulants and Cognitive Tests

Cognitive tests (e.g., intelligence tests, executive functioning tests, and continuous performance tests [CPTs]), although not a required component of ADHD evaluations (Barkley, 2015), are often used by clinicians when ADHD is part of the referral question. Some recent

audit studies (e.g., Nelson et al., 2019) have found cognitive testing to be so common that it can be considered a standard part of the assessment battery. Individuals with ADHD, on average, have been shown to score lower than those without ADHD on these types of tests (Frazier et al., 2004), making them of potential diagnostic value. Scores from cognitive tests are often used as one of the main pieces of evidence within a multi-method evaluation framework to determine the possible presence of ADHD (Nelson et al., 2019). Therefore, the effect of stimulant medications on cognitive performance has potentially significant clinical implications.

The overall empirical evidence does indicate a positive effect of stimulants on cognitive performance. This is the case for both children with ADHD (Coghill et al., 2014) and children without ADHD or any other neurodevelopmental concern (Bagot & Kaminer, 2013). Recent literature has extended these effects to adults as well (Mckenzie et al., 2022). Although stimulants affect behavioral symptoms more than cognitive functioning, the effects on both are significant (Faraone & Buitelaar, 2010; Vertessen et al., 2022).

The effect of stimulants on cognitive performance differs depending on the complexity of the cognitive task. Stimulants have little to no effect on performance on intelligence tests (Pievsky & McGrath, 2018) and complex executive functioning tests (Rhodes et al., 2006). In contrast, more substantial effects have been found on less cognitively complex tasks such as CPTs. For example, Kofler et al. (2013) found stimulants to have a large effect on CPT performance, so much so that the response time variability of children with ADHD was normalized on medication. Indeed, CPTs have been recommended as a sensitive tool for monitoring the effects of stimulant medication for individuals with ADHD (e.g., Cedergren et al., 2022). This should not be surprising, as functional neuroimaging studies have repeatedly found ADHD medication to be associated with increased perfusion in areas of the brain that are related

to performance on cognitive tests such as CPTs (Amen et al., 2021).

Children's baseline performance on cognitive tests may also moderate the effect of stimulants. Although children with ADHD, at a group level, demonstrate weaker abilities across a variety of cognitive tasks (Frazier et al., 2004), individual children with ADHD vary considerably with regard to their pattern of cognitive abilities. Some demonstrate multiple cognitive weaknesses, some only a few, and some none at all. Recent results suggest that stimulants have a larger effect on cognitive performance when the child with ADHD has a significant weakness in the specific cognitive area at baseline. For example, Fosco et al. (2020) found that children with ADHD with the lowest performance on cognitive tasks prior to stimulant treatment showed the largest gains on these tasks with treatment, and they benefitted more from a higher dosage of methylphenidate than did those with less significant baseline cognitive weaknesses.

Finally, concerns have been raised in the past that the high dosages of stimulants that may be required to reduce high levels of hyperactivity and disruptive behavior could potentially result in "cognitive toxicity," making the individual cognitively inflexible and rigid (e.g., Gadow, 1983). Meta-analytic research has not suggested any negative effect of prescription stimulant medications on cognitive performance (Coghill et al., 2014; Vertessen et al., 2022), and some evidence suggests that higher dosages of these medications result in *higher* cognitive performance among children with ADHD (Pietrzak et al., 2006).

In sum, then, patients with ADHD who are taking stimulant medication at the time of the evaluation are likely to have their deficits underestimated on CPTs but not on intelligence tests or other more complex neuropsychological tasks. Moreover, this underestimation is likely to be most significant in the patients with the most severe symptoms. Finally, clinicians need not

worry about stimulants *depressing* performance on cognitive tests, even at high doses, assuming that the medication has been properly prescribed and continued after evaluating for any problematic side effects.

Stimulants and Observable Behavior during Evaluation Sessions

While it has been long understood that ADHD cannot be diagnosed solely by making observations in the office setting (Sleator & Ullmann, 1981), integrating behavioral observations made during evaluation sessions with other data sources (e.g., history, test scores, etc.) as a way to form a complete clinical picture is standard practice in psychological assessment. A small body of research has examined the effect of stimulant medication on actual observable behavior when children with ADHD are assessed, and these studies suggest that the effect of stimulants on observable behavior is likely to be more significant during psychological evaluations than in real-world settings. For example, stimulant effects are larger when observations are made in structured environments rather than unstructured ones (Kavale, 1982), and clinicians are more likely to observe larger effects of stimulants on behavior than are teachers and parents (Faraone & Biederman, 2002).

The Restricted Academic Situation (RAS) is the laboratory measure with the most direct relevance for understanding the effect of stimulants on behavior during evaluations. In this task, the child is left alone in a room and required to complete as many math problems as they can within 15 minutes. The child's behavior during the RAS is observed through a one-way mirror. The idea is to give the child a relatively boring work task without adult supervision—a situation in which it may be difficult for a child with self-control deficits to keep working (Roberts, 1990). Double-blind placebo-controlled studies using the RAS have found large reductions in ADHD symptoms of children with ADHD on stimulant medication compared to those taking a placebo

(Minder et al., 2018). These differences are detectable at even the lowest stimulant dosages (Fischer & Newby, 1998), and behavioral observations made by clinicians using the RAS have been found to be more sensitive to detecting symptom change than parent and teacher ratings (Grizenko et al., 2013). Thus, based on RAS research, it appears that clinicians evaluating children for ADHD have a reduced chance of observing ADHD symptoms when children are taking stimulants during the evaluation process.

Minimal research examining behavior in patient-clinician interactions is available (Minder et al., 2018), and so it is theoretically possible that 1:1 interaction would engage the patient enough that stimulant effects are attenuated. However, unmedicated children with the combined presentation of ADHD have been found to display significantly more observable ADHD symptoms than non-ADHD peers do, while interacting with a clinician to complete diagnostic tests of intelligence and achievement (McConaughy et al., 2009), making it more likely that medication would influence behavior here as well.

Stimulant Effects Over the Short and Long Term

The literature reviewed in the last section found that stimulant medication leads to substantial improvement in performance on continuous performance tests (CPTs) while also reducing clinician-observed ADHD symptoms during at least some tasks completed as part of a diagnostic evaluation. To make thoughtful decisions about taking medication on evaluation day, it is important to examine in detail how stimulants work over the short term (i.e., how quickly and for how long they act) and the long term (i.e., whether their effects change). We now turn to this topic.

Time Course of Stimulant Effects

First-line pharmacological treatments for ADHD include the stimulants amphetamine and

methylphenidate. Stimulant therapy reduces ADHD symptoms markedly for most individuals with the disorder, at least in the short time frame that research studies have focused on (Cortese et al., 2018; Mechler et al., 2022). Both amphetamine and methylphenidate increase synaptic concentrations of dopamine and associated neurotransmission (Faraone, 2018), addressing the decreased dopaminergic function found in ADHD in brain areas such as the prefrontal cortex and striatum (Cortese et al., 2011). In contrast to many psychiatric medicines that take weeks to benefit users, stimulants' therapeutic effects begin as soon as they are in the patient's bloodstream.

Instant-release formulations of amphetamine, such as mixed amphetamine salts (Adderall) and dextroamphetamine (Zenzedi), exert effects within about 30-45 minutes after ingestion and remain effective for up to about 4-6 hours (Childress, 2022; Steingard et al., 2022). Patients often take these medicines twice or three times daily. Extended-release amphetamine formulations (e.g., Adderall XR, dextroamphetamine spansules), usually taken once daily, involve the timed release of more than one dose of the medicine and remain effective for up to 8-12 hours (Childress, 2022; Steingard et al., 2022). The prodrug lisdexamfetamine (Vyvanse) yields amphetamine gradually, with maximal benefits on attention and problem-solving taking effect in about 2 hours and lasting up to 14 hours (Biederman et al., 2007; Wigal et al., 2009, 2010).

Instant-release formulations of methylphenidate (e.g., Ritalin), like amphetamine, take effect within about 30-45 minutes. The effects diminish faster than those of amphetamine, typically within about 3-5 hours (Childress, 2022; Maldonado, 2013). To reduce the need for redosing and the potential for abuse, various extended-release formulations have also been developed for methylphenidate (e.g., Concerta, Focalin XR, Ritalin LA), with effect duration

varying from about 8 to 16 hours, depending on the medicine (Childress, 2022; Steingard et al., 2022).

Tolerance and Withdrawal Concerns

If using stimulants to treat ADHD was analogous to using eyeglasses to correct vision impairments, then the implications of the parameters reviewed above would be straightforward. If you wanted to evaluate a person in their baseline, untreated state, free of any pharmacological influence, you would simply ask them to abstain from stimulant use for 24 hours prior to the evaluation, since no commonly used psychostimulant for ADHD yields benefits for this long—just as if you wanted to assess a person’s baseline, uncorrected vision, you would simply ensure the person did not wear eyeglasses or contact lenses during the assessment.

With stimulant drugs, however, the situation is more complicated. The brain often shows adaptations in response to long-term dosing of psychoactive drugs, and this has been found in studies of ADHD medication in particular (e.g., Wang et al., 2013). For example, in brain imaging research, a single dose of stimulant medicine produced less of a boost in synaptic dopamine levels after individuals with ADHD had taken therapeutic doses of the stimulant for one year (Volkow et al., 2012). Moreover, long-term use of stimulants for ADHD has also been associated with increases in dopamine transporter density in the brain, suggesting the possibility of tolerance (i.e., reduced clinical effects from the same dose of a substance) and of withdrawal effects (i.e., below-baseline functioning after discontinuing stimulants) (Fusar-Poli et al., 2012).

Several lines of evidence also suggest that many individuals who are prescribed stimulants will experience at least some withdrawal effects if they abstain for a day. Although we lack high-quality experimental research on users of stimulants at typical prescription doses, various forms of indirect evidence converge on that conclusion. First, much research has looked

at tolerance to and withdrawal from chronic stimulant use, albeit in recreational contexts, where users often take higher-than-therapeutic doses. Chronic recreational use of stimulants results in downregulation of dopamine functioning, a type of tolerance (e.g., Martinez et al., 2004, 2005). Furthermore, ceasing chronic recreational use of stimulants such as methamphetamine leaves users in a withdrawal state of lower-than-baseline dopaminergic activity as reflected in decreased energy, pleasure, and motivation, and increased dysphoria, with prominent depressive features sometimes lasting a week or more (e.g., McGregor et al., 2005; Zorick et al., 2010).

Second, research on nonhuman animals points in the same direction. In an experiment in which rats were given amphetamine for seven days, motivated behavior (lever pressing to receive sugar) remained below baseline even four weeks after they stopped receiving the amphetamine, demonstrating the possibility of quite prolonged withdrawal states from this class of drugs, at least at higher doses in animal models (Shabani et al., 2019). Extending the eyeglasses analogy, it is as if wearing glasses were to cause greater deformation of the eyeball's shape, so that if a person removed the glasses they had worn for some time, their vision would be worse, for days or maybe weeks afterward, than if they had never worn glasses in the first place.

Third, retrospective chart reviews and long-term naturalistic follow-up on clinical trials have concluded that some ADHD patients treated with stimulants may develop partial or full tolerance to the medicines within days, with a higher proportion developing tolerance over the course of years of treatment (Handelman & Sumiya, 2022). However, estimates of the percentage of patients developing such tolerance have varied enormously even in research that has found tolerance effects (from 3% to over 60%). In addition to this clinical evidence of tolerance, reports indicate that at least some patients prescribed ADHD medications experience withdrawal symptoms upon discontinuation of their medicine (Krakowski & Ickowicz, 2018).

A final source of evidence of tolerance within clinical contexts comes from the common recommendation among prescribers that patients take “drug holidays,” such as weekends off their medicine each week, to reduce the development of stimulant tolerance and the need for escalating doses to achieve therapeutic effect (Ibrahim & Donyai, 2015; Muller-Sedgwick & Sedgwick-Muller, 2020). Moreover, guidelines informed by clinical experience indicate that one or two weeks off of stimulants may be appropriate before assessing periodically whether medication needs to be continued as a patient gets older, suggesting at least relatively short-lived withdrawal effects may exist even when stimulants are used in therapeutic rather than recreational doses (Steingard et al., 2022; Taylor, 2019).

For patients who use stimulant medicines only occasionally, rather than daily, there is some research on recreational use and in animal models suggesting that performance decrements could occur in the day (or days) after stimulant use. Even when people use just a single dose of a reinforcing drug, the rewarding effects are often followed by a negative emotional state, with below-baseline motivation and pleasure (Koob & Le Moal, 2008; Koob & Volkow, 2010). And in an experiment in which amphetamine was administered to rats, dopaminergic activity in the brain had decreased to below baseline by the 18-hour mark, and it took up to 72 hours after drug administration before dopamine functioning and observed behavior returned to baseline (Belujon et al., 2016). In sum, with ADHD medications, the longer the washout period without medication, the better, before conducting an evaluation.

How Important Are Test Session Data?

Viewing the medication decision as an important one assumes that a patient’s behavior and performance on evaluation day provide useful evidence when making a diagnostic decision about the presence of ADHD. Although such an assumption may seem like common sense, it is

not obviously true. First, the clinical evaluation setting is not a naturalistic one for the patient, and so their behavior there may vary markedly from behavior in real-world contexts. Second, the diagnostic tests sometimes used during an ADHD evaluation are very different in format from most real-world tasks, and so the patient's performance on the former may not reflect their ability to perform well on the latter. These are both essentially problems of ecological validity in assessment (see e.g., Chaytor & Schmitter-Edgecombe, 2003).

Thankfully, empirical research has addressed both of these issues. With regard to test session behavior, a large literature has examined the clinical utility of systematic behavioral observations of children and adolescents when diagnosing ADHD. In their review of this literature, Minder et al. (2018) found 27 studies specifically examining behavior during testing sessions. The observation measure used in the vast majority (23) of these studies was the Restricted Academic Situation (RAS)—the math task that we described above. In these studies, relationships between the RAS and other measures of ADHD symptoms have generally been modest, especially for girls and adolescents. These findings, and the few studies on alternative observation measures, suggest that systematic observations do add evidence regarding ADHD, but their contribution is not large.

With regard to performance on cognitive tasks, there is an active debate about the incremental contribution of cognitive measures in diagnosing ADHD (cf. Lovett & Harrison, 2021). Cognitive measures can aid with differential diagnosis, determining functional impairment, etc., but it appears that scores and score profiles from most cognitive measures lack the sensitivity and specificity needed to provide much unique value beyond other established diagnostic tools (such as rating scales). An exception must be noted for CPTs, which have been repeatedly found to add incremental validity (for a review, see Sawaya et al., 2023). Because, as

we noted above, CPTs are quite sensitive to medication effects, clinicians who use CPTs should consider the advantages of measuring CPT performance in patients who are not taking medication at the time of the evaluation.

Conducting Evaluations and Reporting Results: Proposed Guidelines

Inquire into Stimulant Usage in Detail

Perhaps the easiest recommendation is to inquire about and record detailed information about the patient's use of stimulant medications, in the past, currently, and on the date(s) of the evaluation. We often see reports that do not even mention whether the patient took medication during the evaluation, let alone at other times. Inquiring about the precise formulation and dosage of medication is important because, as we discussed earlier, each prescription has different time courses of effects and different implications for likely withdrawal effects. Relatedly, asking about the timing of any medication present that day is helpful; if a patient takes an immediate release stimulant at 7:00 am, goes to school, and then completes a diagnostic evaluation at 3:00 pm (8 hours later), the effects of the stimulant will have worn off at least partially, and the patient may even be experiencing rebound/withdrawal effects.

It is important to not only ask about when medications were *prescribed*, but also how regularly medications were *taken*. Many college students, for instance, are prescribed stimulants that are meant to be taken daily, but in our experience, the students report taking the medication only irregularly, to stay awake to study, or on the day of an exam. In one especially disturbing study, Schaefer et al. (2017) found that only 1 in 10 college freshmen prescribed stimulants took their medication regularly; many students felt pressured to give or sell some of their medication to peers. At the same time that prescribed stimulants are often not taken regularly, stimulant medication is frequently used without a prescription by high school students, college students,

and other adults as well, and some of these users may meet criteria for (undiagnosed) ADHD and be self-medicating (e.g., Benson et al., 2015; León & Martínez, 2017; Weyandt et al., 2016). If this use is either sufficiently regular or else carefully keyed to important tasks (e.g., exams and school projects, or busy periods at work), a patient's history may contain less impairment due to self-initiated treatment, leading to false negatives during diagnostic assessment.

If the diagnostician inquires into these topics prior to the evaluation, it may also be easier to make a decision about whether the patient should take medication on evaluation day. For instance, if the patient reports using stimulant medication only once or twice a week, then asking the patient to refrain from use on evaluation day is far less of a burden, and withdrawal effects are also less likely. Although diagnosticians may be hesitant to put information about nonprescribed stimulant use in a formal report, this type of behavior should at least be asked about, and it should be considered when making decisions.

Consider the Purpose of the Evaluation

If the primary purpose of an evaluation is to determine whether ADHD is present (i.e., whether the patient satisfies the full diagnostic criteria for the disorder at the present time), there is value in assessing the patient off medications, particularly if test session behavior or cognitive tests are being used as evidence. If the patient has been taking their medication daily, it is desirable for the patient to abstain from stimulant use for a full week prior to the evaluation. If this is not possible, and the patient has been using medication daily, withdrawal effects are reasonably likely, and this possibility should be weighed against the value of the cognitive tests and behavioral observation data to be collected. Clinicians should keep in mind that if a patient in potential stimulant withdrawal (i.e., a patient who typically takes medication but does not on evaluation day) does “well” during an evaluation (i.e., obtains average or above-average scores

on cognitive tasks and exhibits low levels of observable ADHD symptoms during the evaluation session), this would have a clear interpretation, but if such a patient does “poorly” during an evaluation, this could be due to either psychopathology (such as ADHD) or withdrawal effects.

A related purpose of an evaluation is differential diagnosis. The diagnostic criteria for ADHD require that the symptoms not be better explained by a different disorder (American Psychiatric Association, 2013), and this may be difficult to determine under medicated conditions. If a patient’s apparent ADHD symptoms are actually due to anxiety, trauma, depression, or some other cause, stimulants can mask—or even exacerbate—the actual problem. This is particularly true when younger children are given excessive doses of medication.

If the primary purpose of the evaluation is to determine the patient’s level of functional impairment for nondiagnostic purposes (e.g., to determine what disability accommodations are needed, or to determine whether psychosocial treatments are needed in addition to medication), there is value in assessing the patient while on medication. This is particularly helpful if a patient will be completing diagnostic tests that are meant to represent real-world activities. For instance, if a patient is seeking extended time accommodations on a high-stakes test due to ADHD, and will be taking medication on the day of the high-stakes test, it is helpful for the patient to also be on medication when completing diagnostic tests (e.g., timed reading measures) that are being used to assess the student’s need for those accommodations. Similarly, if the evaluation is designed to investigate the efficacy of a current treatment regimen, the focus of the assessment activities should be determining the functioning of the patient in a medicated state.

Often, an evaluation has both goals: accurate initial diagnosis *and* determination of appropriate treatments and accommodations. In such cases, some clinicians suggest that a patient be medicated for part of the evaluation. In fact, at times we even review evaluation reports in

which a clinician administers the same measures (often CPTs) twice, both on and off medication. The available research supports such a practice, so long as the testing off medication occurs after a full week without medication. This would be easiest to plan for if the patient is first tested off medication, and then on medication. If the clinician wishes to reverse that order, there should be a substantial gap in time (at least a week) between the two testing dates, if the patient has been taking medication daily.

Prevent Undue Risk to Patient Safety

One reason why some clinics and clinicians may recommend that patients take medication as prescribed on testing day is concern over the risks of severe, untreated symptoms during a period of abstinence. (Withdrawal effects could make such symptoms even worse.) A child who has severe symptoms and then abstains from medication for several days (in preparation for an evaluation) may exhibit unacceptably disruptive or dangerous behavior during that period. A young adult with severe symptoms may not even feel like they can safely drive to the testing appointment without medication. These are legitimate concerns, given that children with ADHD are far more likely than children without ADHD to cause significant unintentional injury to themselves (Amiri et al., 2017). Likewise, stimulant medications have been shown to reduce the risk of accidents and physical injury generally (Brunkhorst-Kanaan et al., 2021) and the probability of motor vehicle crashes more particularly (Chang et al., 2017) among individuals with ADHD.

The decision to remove a known effective treatment, then, is not a trivial one. At times, the solution is pragmatic (e.g., a caregiver can often drive an unmedicated young adult suspected of ADHD to an evaluation appointment), and we encourage these types of solutions when possible, to avoid any undue risk. However, many times, the circumstances are more

complicated, and there will likely be some risk incurred in order to conduct the evaluation in the desired way. This is why, as we mentioned earlier, the precise purpose of the evaluation is so important, and evaluators should consider the value of medication abstinence in relation to that purpose.

One way of addressing ethical concerns is to involve other professionals as appropriate. There will be times when medication abstinence is desirable for evaluation purposes, and in such cases, evaluators should ask patients (or parents) to check with the prescribing medical professional to confirm that it is acceptable to abstain from medication for this purpose. Without such consultation, it is ethically questionable for evaluators to direct the temporary removal of treatments they are not qualified to prescribe themselves.

Give Due Weight to Data from Outside the Evaluation Setting

It is helpful to keep medication decisions in perspective by remembering how much of the evidence considered in a proper ADHD evaluation should be information about the patient's behavior and performance *outside of the evaluation setting*. Data from interviews, symptom questionnaires, and rating scales concern behavior outside of the evaluation, and so they are quite relevant. Objective historical records of performance (report cards, discipline records, job performance evaluations, etc.) are even more clearly external, since they were not generated for the purpose of a diagnostic evaluation. As we discussed earlier, clinicians' observation of patient behavior can be helpful to have, and many evaluators find cognitive tests valuable as well, but these should not be the sole sources of evidence, or even the principal ones, when making a diagnosis (Sawaya et al., 2023). The foregoing is just as true when the primary purpose of the evaluation is not diagnosis per se. For instance, if a psychological evaluation is being used to determine a student's need for educational accommodations, performance and behavior during

the evaluation should be supplemented by records of class grades, standardized test score reports, classroom observations, teacher comments, and the like. If anything, the fact that medication use and abstinence can both have complex effects on evaluation-day performance should lead clinicians to emphasize other data sources even more. All this makes the decision of whether the patient should be on medication for the evaluation less critical, and instead reinforces the need to *document* whatever medication use there is in detail.

Consider Medication Status When Integrating Data

The discussion of real-world evidence naturally raises the question of data from symptom rating scales and interviews. Such data are only produced as part of an evaluation, but they are presumably based on the patient's behavior outside of the evaluation setting. Consider, then, a patient who has taken medication daily for years. Rating scales will be describing the patient's symptoms on medication, and if the patient abstains from medication for evaluation day, any discrepancies between rating scale data and diagnostic test performance/behavior may be attributable to medication effects. Therefore, although there is often some value in assessing a patient off medication, this must be kept in mind when integrating data from the evaluation day itself with other evidence that is based on behavior on medication. Some evaluators have tried to address this issue by asking interviewees and rating scale respondents to describe how the patient behaves off medication. Indeed, some attention-related symptom rating scales (e.g., the Barkley Sluggish Cognitive Tempo Scale Children and Adolescents; Barkley, 2018) direct informants to rate symptoms when patients are off medication, and some semi-structured diagnostic interviews (e.g., the ADHD module of the Schedule for Affective Disorders and Schizophrenia for School-Age Children; Kaufman et al., 2006) direct clinicians to inquire about symptoms prior to medication trials or when the patients are on drug holidays. This approach has advantages, but if

a patient has taken medication regularly for a long period of time, the respondent may not really know how the patient behaves off medication. Therefore, evaluators should *expect* discrepancies between the two types of evidence, particularly when patients abstain from medication for an evaluation.

Limitations and Future Directions

In reviewing the extant research literature, we found sufficient empirical support for several recommendations. However, we should be candid about the limitations of the literature base, and those limitations provide future directions for researchers. First, although the research on stimulant effects on cognitive performance includes many adult as well as child studies (Mckenzie et al., 2022), virtually all of the studies on *behavior* during evaluations involve children. Since overt hyperactivity is the symptom area that tends to decrease most as children with ADHD grow up, it is possible that evaluation behavior would be of less value in identifying ADHD in adults, but empirical research on this point is currently lacking. Second, although the washout periods that we have recommended are based on a number of converging lines of research, the most direct type of research—cognitive testing on individuals at varying time points after typical therapeutic doses of stimulants were halted—has actually not been done. Finally, since rating scale and interview data are such core elements of ADHD evaluations (Owens et al., 2020), research is needed on what happens when respondents are asked to describe the patient’s behavior off medication. Lines of research such as these will help to further improve evidence-based decisions about medication use during evaluations.

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