

# **Maximizing the Benefits of Stimulant Medication Treatment for Children with AD/HD**

by

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Greetings:

Thank you for requesting this article that will provide you with research supported information about maximizing the benefits of stimulant medication treatment for children with AD/HD.

My purpose in writing and distributing this article is not to advocate for medication treatment. Indeed, decisions about what is the appropriate treatment, or combination of treatments for each child are best made by parents in consultation with a qualified health care professional.

Instead, it is my hope that if you decide that medication treatment is an appropriate treatment for your child, or already have a child who is being treated with medication, that the information contained in this article will help you to maximize the benefits of this intervention. As you will see, there are several relatively simple procedures that, if followed, can increase the likelihood that a child will derive the greatest possible benefit from medication treatment. This article will provide you with information that you need to accomplish this for your child.

I am grateful to McNeil Consumer and Specialty Pharmaceuticals for supporting my efforts to distribute this information to parents who may benefit from it. McNeil produces Concerta – one of the medications used to treat AD/HD – and I applaud their efforts to help provide parents with information that will help this as well as other stimulant medications be used in a responsible manner.

You can receive additional useful information from McNeil – including a free DVD or CD that depicts the benefits of carefully conducted, multi-modal AD/HD treatment - by visiting [www.infoadhd.com](http://www.infoadhd.com).

I hope your find the information contained in this article to be useful to you.

Sincerely,

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## **Maximizing the Benefits of Stimulant Medication Treatment for Children with AD/HD**

When a child is diagnosed with AD/HD, an important decision that parents confront is whether to include medication as part of their child's overall treatment plan. Although many factors are involved in this decision, medication treatment is frequently recommended because it currently has the most substantial research support as an effective treatment for AD/HD. By 1996, 161 randomized controlled trials involving thousands of individuals with AD/HD had been published, and improvements were reported to occur in between 65 and 75% of those receiving stimulant medication.<sup>1</sup> Although many of these studies lasted fewer than 12 weeks, results from the Multimodal Treatment Study of AD/HD<sup>2</sup> (i.e. MTA study) indicated that benefits of carefully conducted medication treatment were sustained over the 14-month period that children were followed.

Despite the well-documented benefits of medication treatment, results from carefully conducted research may overestimate the value typically provided to children treated in community settings. In the MTA study, children receiving medication treatment - whether alone or in combination with intensive behavioral therapy - experienced greater reductions in AD/HD symptoms than children treated with medication by community physicians. For example, at the end of the 14 month study, 68% of children receiving combined treatment (i.e. medication and behavior therapy) and 56% of children receiving medication treatment alone had ratings of AD/HD and ODD (i.e. oppositional defiant disorder) symptoms that fell within the normal range. In contrast, only 25% of community treated children treated - two-thirds of whom received

medication - showed normalized levels of symptoms.<sup>3</sup> Approximately 90% of children receiving medication in the MTA study no longer met full diagnostic criteria for AD/HD.<sup>4</sup> Results from another recently published study, however, indicated that that almost 40% of children treated with medication by community physicians continued to meet full AD/HD diagnostic criteria.<sup>5</sup> Finally, in another recent report, there was no indication that community-based treatment improved the educational outcomes for children AD/HD.<sup>6</sup>

A reasonable conclusion to draw from this evidence is that many children with AD/HD who are treated with medication fail to benefit to the extent possible. Understanding why children treated in research studies often do better than children receiving the same medication in the community is thus very important. This knowledge can help parents maximize the benefits of medication treatment for their child, should the decision to try medication as part of a comprehensive treatment plan be made in consultation with their child's health care provider.

### **Lessons from the MTA Study**

How can the benefits provided by medication treatment be maximized? An examination of medication treatment procedures used in the MTA study provides valuable information on this question. Key elements of these procedures, and how they are likely to differ from typical practice, are highlighted below.

- Children were tested initially on 3 different doses of stimulant medication and a placebo. Parents and teachers completed standardized ratings of children's behavior and side effects on each dose to help insure that medication provided a significant benefit (i.e. the child did better on medication than on placebo) and to

determine the optimal starting dose for each child. *Systematic monitoring of children's response to a full range of doses, although recommended in the treatment guidelines recently published by the American Academy of Pediatrics<sup>7</sup>, may often be neglected in community practice settings. As a result, many children are likely to start treatment on a non-optimal dose.*

- When the initial stimulant tried was not effective, rather than giving up on stimulant medication, testing was continued using other stimulants. Although a small number of children required non-stimulant medication, and some did not benefit from any medication, an effective medication was eventually found for the vast majority of children. *In community settings, it may be more common for medication to be discontinued if initial results are not positive, or to switch to another class of medication (e.g. anti-depressants) before trying other stimulants.*
- MTA treated children received 3 doses per day to provide full day coverage. Children treated in the community averaged one fewer dose per day and, on average, received a smaller total daily dose. *Because study treated children experienced greater benefit from their medication treatment, children treated in community settings may frequently be maintained on doses that are not sufficient to provide maximal benefit.* (Note: The initial stimulant used in the MTA study was methylphenidate, the generic form of Ritalin. Since the MTA study was conducted, several longer acting stimulants have become available - e.g. Concerta, Adderal-XR, Metadate, Ritalin-LA. These medications may be preferable in many instances because they eliminate the need for administration during the school day, something which often poses a variety of problems.)

- Once the initial medication and starting dose was determined, ongoing treatment effectiveness was monitored via monthly follow up visits and phone contacts with children's teachers. *In community settings, ongoing treatment monitoring is typically far less intensive.*

### **Translating these Lessons into Practice**

Although there were other differences between study- and community-treated children, those discussed above seem to be especially important. Because the procedures used in the MTA study resulted in better child outcomes, parents should try to make sure their child's medication treatment is consistent with these procedures. Although the specifics of some MTA medication treatment procedures would be difficult to replicate exactly in community settings (e.g. the initial placebo-controlled trial involving daily dose changes and daily teacher and parent behavior ratings), the principals underlying these procedures can be readily incorporated into children's treatment. In fact, guidelines for improving AD/HD medication treatment in community settings that draw on MTA results have been published recently by the American Academy of Pediatrics<sup>7</sup>, the American Academy of Child and Adolescent Psychiatry<sup>1</sup>, and the Texas Consensus Conference Panel<sup>8</sup>. Key elements of these guidelines are synthesized below.

**Guideline #1- When initiating medication treatment, be sure that your child is tested on a full range of doses.**

The optimum stimulant dosages for a child are not weight dependent and it is not possible to predict in advance what the best dose -- or most effective stimulant -- will be for an individual child. Clinicians should begin with a low dose and gradually increase it across the full range of recommended dosages to determine the best fit for each child. The critical reason for this is that the first dose to yield positive results may not be the best dose to optimize a child's functioning, and unless a child is tried on a full range of doses, it is quite possible that the optimal starting dose will be missed.

**Principal # 2 - Before medication treatment is implemented, parents should insist that a systematic procedure is in place to monitor the effectiveness of the different doses being tested.**

Determining the benefits of medication treatment need to be far more systematic than anecdotal reports from a teacher that the child seems to be "doing better". Treatment guidelines recently published by the American Academy of Child and Adolescent Psychiatry recommend that standardized and validated behavior rating scales, along with systematic procedures for evaluating side effects, be used to determine whether medication was effective and to decide upon the optimal starting dose. In addition to ratings of core AD/HD symptoms - i.e. inattention and hyperactivity-impulsivity - information should also be obtained on the child's academic functioning, social relations, and ability/willingness to follow rules at home and school. This is important because effective treatment for AD/HD should enhance children's functioning in these key areas

in addition to reducing core AD/HD symptoms. And, even when medication is effective in reducing core symptoms, residual difficulties in important functional areas can still remain. When this occurs, additional treatments targeting these residual difficulties need to be incorporated. Without a procedure for assessing outcomes of medication treatment in multiple domains, information needed to make these important treatment decisions will not be available.

**Principal #3 - If the initial stimulant medication tested is not effective, alternative stimulants should be tried before giving up on medication, trying a different class of medication, or combining other medications with a stimulant.**

As noted in AAP treatment guidelines, children may respond favorably to one stimulant, but not another. And, which stimulant or dose will be most effective for a particular child is currently impossible to predict. For these reasons, the guidelines recommend that 2-3 stimulant medications be tested across a full range of doses before non-stimulant medications be considered.

Results from the MTA study suggest that when this procedure is followed, the vast majority of children with AD/HD will obtain effective AD/HD symptom management with one of the stimulants, and using non-stimulant medications (e.g. clonidine, antidepressants, etc.) or multiple medications will rarely be necessary. In fact, less than 2% of children receiving medication treatment in the MTA study were on non-stimulant medications at the end of the study<sup>2,4</sup>. Many children treated in community settings, however, are prescribed non-stimulant drugs or receive several medications simultaneously. For example, a recent report indicates that almost of 25% of children

who receive stimulant treatment are also prescribed a second medication<sup>9</sup>. This is concerning because research supporting the safety and efficacy of combined pharmacotherapy for children with AD/HD is sparse. Although there are specific situations where the use of non-stimulants and/or multiple medications may be necessary and appropriate, these practices seem to be outpacing currently available research support, and parents who receive such recommendations for their child should proceed cautiously.

**Principal #4 - After medication treatment has been initiated, it is critically important to monitor its ongoing effectiveness so that any necessary treatment adjustments can be made.**

The importance of carefully and systematically monitoring the ongoing effectiveness of medication treatment for AD/HD cannot be overstated. In many instances, although a child's symptoms may be managed well as treatment begins, this can change significantly over time. In the absence of a careful procedure for monitoring a child's ongoing functioning, treatment adjustments necessary to maintain optimal symptom management may not occur and poorer outcomes are likely to result.

The importance of carefully monitoring the ongoing effectiveness of medication treatment was highlighted in a recent report from the MTA study<sup>10</sup>. As discussed above, medication treatment in the MTA study began with a careful procedure to determine the optimal starting dose for each child. Monthly follow up visits, including gathering direct information about the child's functioning from his/her teacher, were then used to

determine whether this dose continued to be effective, or whether adjustment to the child's medication treatment was required.

One might think that because such a careful procedure was used to determine the optimal medication and dose for each child, the need for adjustments would be relatively rare. As indicated below, however, this was not the case.

- Only 17% continued on the same medication and dosage throughout the entire 13-month maintenance period. The remaining children all experienced at least one change in drug or dosage during this period.
- Three months into the maintenance period, 56% of children had already had their medication or dosage changed. The average amount of time to the first dose change was 4-5 months. Across the entire maintenance period, the average number of changes required for each child was just over 2, but some children required as many as 10 medication adjustments. Of the total medication changes made, 62% involved increasing the dosage of the current medication, 31% involved decreasing dosage, and only 7% involved changing medications entirely.

As these results illustrate, effective medication treatment for AD/HD goes far beyond finding a medication and dose that provides initial benefits and simply continuing that treatment over time. Even when this initial treatment is determined in the most careful manner possible, it is likely that adjustments will be required to sustain maximal treatment benefits over time. Unfortunately, the monitoring required

to make well-informed decisions about such adjustments may occur infrequently in community settings. For example, children who received community care in the MTA study averaged just over 2 follow up visits per year, rather than the monthly visits provided for study treated children. And, it is unlikely that direct feedback from teachers was routinely obtained. This difference in ongoing treatment monitoring, and the adjustments to children's treatment that were made as a result, may be the single most important reason that MTA treated children had superior outcomes to those treated in the community. It should be noted that the need for careful treatment monitoring is not limited to medication treatment, but is essential for whatever type of intervention(s) a child is receiving

Without careful monitoring of ongoing treatment effectiveness, information needed to determine when treatment adjustments may be necessary will be lacking. As a result, a child may receive sub-optimal medication treatment over an extended period, and this can adversely impact functioning in a variety of areas. Parents can minimize this possibility for their child by insisting that there be a plan to monitor the ongoing effectiveness of their child's treatment. This monitoring plan should include attention to both core AD/HD symptoms as well as key functional outcomes (e.g. academic performance, peer relations, following class rules), and physicians should be receiving this information from both parents and teachers. I have developed a relatively simple monitoring system that provides one example of how to obtain and interpret this important information from teachers. This system can be used to monitor the effectiveness of other interventions as well and is available for free at [www.helpforadd.com/monitor.htm](http://www.helpforadd.com/monitor.htm).

## Summary

It is important to emphasize that the guidelines presented above are based on current research regarding best practices for medication treatment. As new research is published, and new medications become available, best practice procedures may change accordingly. For example, the first non-stimulant medication specifically approved for treating AD/HD has recently been introduced and research on this medication may result in its being regarded as a viable alternative to stimulants as a first line treatment. Regardless of what new medications become available, however, the recommendation pertaining to ongoing and systematic treatment monitoring should remain critical.

It should also be stressed that even when medication treatment provides substantial benefits, as it often does, many children with AD/HD will require and benefit from additional interventions such as behavior therapy and appropriate educational assistance. In fact, results from the MTA study indicated that the combination of carefully monitored medication treatment and intensive behavior therapy was generally more helpful overall than medication treatment alone. Thus, maximizing treatment benefits for a child with AD/HD will often require a combination of interventions of which medication is but one component.

As noted above, the guidelines synthesized above have all been published relatively recently, and one hopes that physicians will quickly incorporate recommendations from these guidelines into their regular practice patterns. In particular, because primary care physicians treat the vast majority of children with AD/HD, guidelines from the AAP have the potential to significantly enhance the quality of care

that many children receive. Because treatment guidelines may not be adopted quickly, however, in many instances it will be up to parents to make sure that their child's treatment is consistent with current best practice guidelines. I hope this article has provided information that can assist parents in this critically important task.

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