

ADHD, a Food-Induced Hypersensitivity Syndrome: in Quest of a Cause

**The effects of a restricted elimination diet (RED) on ADHD,
ODD and comorbid somatic complaints,
and a preliminary survey of the mechanisms of an RED**

Een wetenschappelijke proeve op het gebied van de
Medische Wetenschappen

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- 10) it is not clear whether the child has to stick to the individual dietary restrictions perpetually, or whether children may overgrow the hypersensitivity,
- 11) occasional non-compliance with the therapeutic dietary advice will not be a problem, because in most children the behavioural problems occur only if the incriminated food is eaten for several days in succession and if the amount of the food exceeds an individually established threshold.

9.8. Suggestions for DSM-V

The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) will be published in May 2013. The DSM is a renowned and widely used standard handbook describing and classifying mental disorders. Most classifications are based on specific symptoms which have to occur for a determined period of time and which have to cause significant impairment, consequently, most DSM diagnoses are symptomatic, i.e. based on symptoms instead of on causes (causal diagnoses). Of course, in psychiatric disorders it is common practice and justifiable to make symptomatic diagnoses, considering that the aetiology of most disorders is complex and unclear. Nevertheless, in some psychiatric disorders the diagnoses do refer to the cause, e.g. in Substance-Induced Delirium, Alcohol-Related Disorders, Amphetamine-Related Disorders and Cocaine-Induced Disorders. In accordance with these cause-related diagnoses the impact of an RED on ADHD has clearly been established, as a consequence of which part of the causal puzzle of this disorder is solved. Naming and blaming food as a cause of ADHD and integrating this knowledge (which was already incorporated in an algorithm for treatment of ADHD in 2001) in the DSM-V would be a considerable step forward towards understanding and treating ADHD, with concurrent beneficial effects for the children suffering from this disorder.

In addition to the suggestion to include food-induced ADHD (FI-ADHD) in the DSM-V, it is worth considering to substitute the current dichotomic symptom inventory ("often" versus "not often") by an inventory that specifies the rather vague and ambiguous indication "often". It is important to define the exact meaning of "often" in order to make a correct inventory of the behaviour of the child. The absence of a specific definition of "often" may lead to misinterpretation of the child's behaviour in parents with a lack of resilience as well as in parents

who abound in resilience. Parents who lack resilience may answer too negatively and may interpret a frequency of twice a week as “often”. Conversely, parents who abound in resilience may answer too positively, interpreting twice a day as “not often”. To prevent these diagnostic problems, the ADHD Rating Scale (ARS) would be a convenient instrument to make an inventory of the behaviour, at home as well as at school. The ARS, based on the DSM-IV criteria for ADHD, consists of the well-known nine inattention and nine hyperactivity/impulsivity criteria, but uses a four-point scale in which the occurrence of the behaviour is specified: 0 = never (less than once a week); 1 = sometimes (several times a week); 2 = often (once a day); and 3 = very often (several times a day). Three measures may be taken from the ARS: total score (0–54), inattention score (0–27), and hyperactivity/impulsivity score (0–27). A score of 2 (often = at least once a day) or 3 (very often = several times each day) points indicates that the child meets that specific ADHD symptom, while a score of 0 or 1 is considered normal behaviour.

It must be noted that some questionnaires apply the following 5 point scale: 0 = never; 1 = sometimes (occasionally); 2 = regularly (once a month); 3 = often (once a week); and 4 = very often (once a day).⁹³ It is important to note that whenever this questionnaire is applied, children will meet the criteria for ADHD when the ADHD symptoms occur once a week only. According to the ARS the same child would exhibit normal behaviour, because any child is expected to fidget, to be inattentive, or to talk before its turn once a week. To prevent children from being diagnosed with ADHD too easily, the DSM-V might add guideline suggestions in order to realise consistency in questionnaires used in ADHD, and might replace “often” by “at least daily”.

Furthermore, the DSM-V Task Force might also reconsider the DSM-IV notion that ADHD is a discrete disorder. According to the current categorical approach of ADHD children who show evident clinical significant impairment but who do not meet the required number of symptoms (children with 5/9 inattention symptoms and 5/9 hyperactivity/impulsivity symptoms) will *not* be diagnosed with ADHD, while children with *only* 6/9 inattention symptoms and none of the hyperactivity/impulsivity symptoms *will* be (see figure in [Chapter 1](#)). Of course, children not meeting the symptom criteria may meet the criteria for ADHD-NOS, but somehow, unlike PDD-NOS, this diagnosis does not appeal to physicians and is scarcely used. The above described diagnostic problem, in which some children who show more problems do not meet the criteria of ADHD while children

showing less problems do, would be solved if the categorical DSM-IV notion of ADHD was replaced by a continuous notion in the DSM-V.

To date the view that ADHD is a continuous rather than a discrete disorder seems to prevail.⁹⁴⁻⁹⁷ The notion of behaviour as a continuum with ADHD at the extreme end is commensurable to high blood pressure at the extreme end of blood pressure and obesity at the extreme end of weight. In all three conditions, behaviour as well as blood pressure and weight, it is important to establish the turning point: which weight, blood pressure, or number of ADHD symptoms are considered normal, and where does pathology start? One of the diagnostic DSM-IV criteria for ADHD might be considered the ADHD turning point, namely: “there must be clear evidence of clinically significant impairment in social, academic or occupational functioning”. This may be a common-sense approach with a decisive role for the child’s impairment reported by parents and teachers to make the diagnosis, independently of the exact number of symptoms.

In conclusion, the DSM-V will mark one of the most anticipated events in the mental health field. Based on convincing evidence and the advice made in *Chapter 6* concerning the effect of an RED on ADHD some changes are suggested to incorporate in the diagnostic category of Neurodevelopmental Disorders, specifically in ADHD. First of all it is timely to focus on food and to incorporate FI-ADHD in the DSM-V. Furthermore, the inventory of the behavioural problems might best be made using the ARS, in which “often” is defined as at least once a day. And finally, the DSM-V Task Force might take into consideration the replacement of the categorical ADHD notion by a continuous notion, in which the child’s dysfunction or impairment may be considered as the pivotal and decisive important factor to define where normal behaviour ends and ADHD starts. These changes may contribute to the improvement of our child mental health care and the focus on food may offer opportunities for prevention of ADHD.

9.9. To conclude

Right now, the main therapy of children with ADHD is medication, eliminating symptoms during 3-12 hours depending on the drug, with an effect size of 0.6-0.9 and with disappointing long-term effects. This dissertation has shown that in the majority of young children ADHD may be caused by food and that an RED is an

effective treatment of ADHD in children diagnosed FI-ADHD, preventing symptoms 24/7 with an effect size of 1.2 and with promising long-term prospects. The pros of an RED are to such an extent that the current treatment might be expanded with RED research, especially in young children with ADHD. Although expert supervision is needed to diagnose a hypersensitivity to food in ADHD, a recent overview of 35 years of research into diet and ADHD resulted in an advice to encourage motivated parents, whether the child is on medication or not, to follow an RED.⁹⁸

The RED research consists of a diagnostic part to segregate between FI-ADHD (children responding favourably to the RED) and C-ADHD (nonresponders). Children diagnosed with FI-ADHD start a challenge period to establish the incriminated foods, and at the end of the challenge period the therapy consists of dietary advice to avoid certain foods. Offering children with ADHD the opportunity to follow an RED may result in prevention of ADHD and consequently in improvement of the children's prospects. Children diagnosed with C-ADHD start psychological research and treatment as usual, as has been shown in an algorithm for multimodal diagnosis and treatment of ADHD (see figure 4, chapter 9). Children of parents not motivated to start or to comply with an RED should start treatment as usual.