MYTH BUSTERS:

The Gluten-Free and Casein-Free Diet is not Effective in Treating Autism and its Related Behaviors

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In our clinical practice, parents frequently ask us whether the gluten-free/casein-free diet would help in diminishing the symptoms related to their child's autism diagnosis or even cure it. Parents often tell us that they have spoken to their local autism association who strongly recommend that they remove gluten and casein from their child's diet. They feel guilty for not following this recommendation and would like to know if there is any scientific data supporting this recommendation. Here is what the science has to say about it.

IS THERE SCIENTIFIC EVIDENCE TO SUPPORT THE IDEA THAT A GLUTEN-FREE/ CASEIN-FREE DIET IS EFFECTIVE IN AUTISM?

No and here is why

The two published double-blind studies (2006_1, 2016_2) found that there were no differences in autism symptomatology or its related behaviours (i.e., agitation, tantrums, difficulty sleeping) following the introduction or the removal of casein and gluten in the diet of children with autism. During these studies, many of the parents reported that they had observed positive changes in their child's behaviour which they attributed to the specialized diet. At the end of these studies parents were informed that their children were in fact not following a gluten-free/casein-free diet at the time they reported positive changes. Therefore, the perceived changes were due to a placebo effect.

In order to determine the effectiveness of a treatment, researchers must be able to eliminate the placebo effect. This is done by using studies that are "controlled", "randomized", and "double blind". A "controlled" study is when one group of participants receive a treatment while those in another group do not. At times, participants can be receiving treatment for part of an experiment and then go without treatment for the remainder of the experiment. Studies are said to be "randomized" when the people participating are randomly allocated to treatment groups, without the ability to choose who is in what group by neither the researchers nor the participants. "Double blind" occurs when both the participants and the researchers are unaware if the treatment is being administered or not.

THEREFORE WHERE DOES THIS BELIEF COME FROM?

It comes from two studies (2002_3, 2010_4) reporting significant improvements in social interactions, communication, and atypical behaviours with the gluten-free/casein-free diet. However, parents answering questions about the effectiveness of the diet were not blind to the fact that their child was receiving a specialized diet. More so, the researchers in the 2010_4 article stated that there were no reported effects when observers were blind to the treatment group (i.e., the child was observed by someone who did not know if the child was receiving a specialized diet or not). Again, the placebo effect in this study explains the positive improvements reported by parents.

WHAT ARE THE RISKS TO A GLUTEN-FREE/ CASEIN-FREE DIET?

There are few studies that have looked at the health effects of this type of specialized diet in children. From the 2010_4 study, the researchers reported adverse effects while the parents did not

report any secondary effects. The study in 2016[2] concluded that the specialized gluten-free/casein-free diet is safe as long as the diet is being supervised by a dietician. The Academy of Nutrition and Dietetics caution that going on this specialized diet can lead to deficiencies with certain nutrients and minerals (particularly Vitamin D and iron). They also highlight that anyone on this specialized diet, as those with coeliac disease, should always be supervised by a dietician. Also, a child with autism may already be a "picky eater" therefore further changes to their diet may be difficult.

CONCLUSION

There is no scientific evidence to support that the gluten-free/ casein-free diet is effective in treating autism symptoms or its related behaviours. If an individual with autism believes they have Coeliac Disease, they should consult with a doctor. A doctor will be able to confirm the diagnosis and determine whether a specialized diet is necessary to aid in alleviating the symptoms of Coeliac Disease and not for treating autism symptomatology or its related behaviours.

References

Study 1: Harrison, J. et al. (2006). The Gluten-Free, Casein-Free Diet In Autism: Results of A Preliminary Double Blind Clinical Trial. Journal of Autism and Developmental Disorders, Vol.36 (3): 413-420

Study 2: Hyman, S.L. et al. (2016) The Gluten-Free/Casein-Free Diet: A Double-Blind Challenge Trial in Children with Autism. Journal of Autism and Developmental Disorders, Vol.46 (1):205–220.

Study 3: Knivsberg, A.M. et al. (2002) A randomised, controlled study of dietary intervention in autistic syndromes. Nutrional Neuroscience, Vol.5(4):251-61.

Study 4: Whiteley, P. et al. (2010) The ScanBrit randomised, controlled, singleblind study of a gluten- and casein-free dietary intervention for children with autism spectrum disorders. Nutritional. Neuroscience. Vol.13, No 2.

LATERAL GLANCES IN AUTISM SPECTRUM DISORDERS

By Janie Degré-Pelletier, undergraduate student in psychology at Université du Québec à Montréal (UQAM)

One of the two characteristics that are required to diagnose Autism Spectrum Disorders (ASD) is the presence of repetitive behaviors. Atypical visual exploratory behaviors for inanimate objects (AVEBIOs) are among the repetitive behaviors frequently found in autism. These atypical behaviors include *lateral glance* (the child looks at an object out of the corner of his eyes while turning his head or moving the object), *close gaze* (inspects an object within a 3-inch range to his eyes) or *obstructed gaze* (looks at an object by closing one eye or by placing another object between his eyes and the object of interest). Few studies have focused on AVEBIOs. The only empirical studies explored AVEBIOs within the broader set of repetitive behaviors.

Researchers from Rivière-des-Prairies Hospital developed a tool to identify, describe and assess AVEBIOs. First, they developed a list of all AVEBIOs in order to code 40 videos of ADOS -G assessments (*Autism Diagnostic Observation Schedule – Generic*; a clinical diagnostic tool). They identified AVEBIOs and determined their frequency and duration. They analysed the context surrounding AVEBIOs to determine the conditions under which these behaviors occur. Finally, they compared the AVEBIOs evident in autistic children to those exhibited by non-autistic children.

RESULTS

Lateral glances were the most common AVEBIO, and were five times more prevalent in autistic compared to typical children. In a significant number of