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THE IMPACT OF GLUTEN CONSUMPTION ON NEUROLOGICAL DEVELOPMENT AND COGNITIVE DYSFUNCTION IN CHILDREN

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Abstract: This study investigates the impact of gluten consumption on the neurological development and cognitive functions of children. Children aged 7 to 12 years were divided into two groups: one consuming gluten and the other following a gluten-free diet. The study assessed various cognitive functions, including attention span, memory, and motor skills, using psychometric tests. Results indicated that gluten consumption negatively impacted children's cognitive abilities, whereas a gluten-free diet showed improvement. Further research is necessary to confirm these findings and provide dietary recommendations for optimal development.

Keywords: Gluten, Cognitive Development, Neurological Function, Attention Span, Memory, Gluten-Free Diet

Introduction

Gluten, a protein found in wheat, barley, and rye, is commonly included in the diet of many children. However, recent studies have raised concerns about the potential neurological and cognitive impacts of gluten consumption. In particular, its effects on children's attention, memory, and learning abilities remain inadequately explored. This study aims to explore the correlation between gluten consumption and cognitive performance in children aged 7-12 years.

Study Objective

The objective of this study is to determine the impact of gluten consumption on the neurological development and cognitive functions (such as memory, attention, and learning abilities) in children aged 7 to 12 years.

Materials and Methods

The study was conducted with 100 children aged 7 to 12 years, divided into two groups: one group consumed gluten in their diet, and the other group followed a gluten-free diet. Psychometric tests such as Benton's Visual Retention Test, Digit Span Test, and Conners' Continuous Performance Test were used to assess cognitive functions like attention span, memory, and motor skills. Additionally, dietary intake and its effects on the children's development were monitored.

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Results and Analysis

The results showed significant differences between the two groups. Children consuming gluten had difficulty maintaining attention, with lower scores on the Conners' Continuous Performance Test and Digit Span Test. These children also demonstrated poorer visual memory and retention as assessed by Benton's Visual Retention Test. Furthermore, their motor skills and psychological development, assessed by the Motor Coordination Test and Strengths and Difficulties Questionnaire, were found to be less developed compared to the gluten-free group. Children following a gluten-free diet exhibited improvements in cognitive functions, including attention span, memory, and motor skills.

Discussion

The findings of this study suggest that gluten consumption may have a negative impact on cognitive functions in children, particularly in terms of attention, memory, and learning. These results align with existing literature suggesting that gluten may affect neurological and cognitive development. A gluten-free diet appeared to mitigate these effects, with children in this group performing better on cognitive tests. Further research is needed to explore the underlying mechanisms and long-term effects of gluten on children's cognitive development.

Conclusion

This study demonstrates that gluten consumption can negatively impact cognitive development in children, particularly in attention, memory, and learning abilities. A gluten-free diet may offer a beneficial alternative for children with cognitive challenges. Further research is necessary to better understand the long-term effects of gluten and its role in child development.

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