P24: Healthy Eating and Executive Functioning Among Young Children With and Without ADHD: The Role of Fruits and Vegetables

Margaret Johansson, B.S., Eva Goldhagen, M.A., Madeline Curzon, M.S., Leanett Reinoso, B.A., Melissa Hernandez, M.S., Catherine Coccia, Ph.D., Anthony Dick, Ph.D., Paulo Graziano, Ph.D.
Florida International University

Intro

- Healthy eating is theorized to prevent age-associated cognitive decline (Mao et al., 2019; Stern et al., 2013), and impact brain development (Gluckman & Hanson, 2006), but our understanding of how it affects cognitive development is limited.
- Fruit extracts support acute executive functioning (EF) in children (Gillies et al., 2025), though research has not examined whole fruits and vegetables (FVs).
- Furthermore, added sugars relate to worse cognitive functioning in adolescents/adults (Gillespie et al., 2024), but this relation in early childhood remains unexamined.
- Filling these gaps, the present study examined the associations of FVs and added sugars on EF in young children with/without Attention-Deficit/Hyperactivity Disorder (ADHD).

Methods

Participants

127 children ages 4-7 with ADHD and 96 typically developing (TD; *Mage* = 5.48, *SDage* = .74, 65.9% male, 81.6% Hispanic/Latinx, 8.1% Black, 93.3% white)

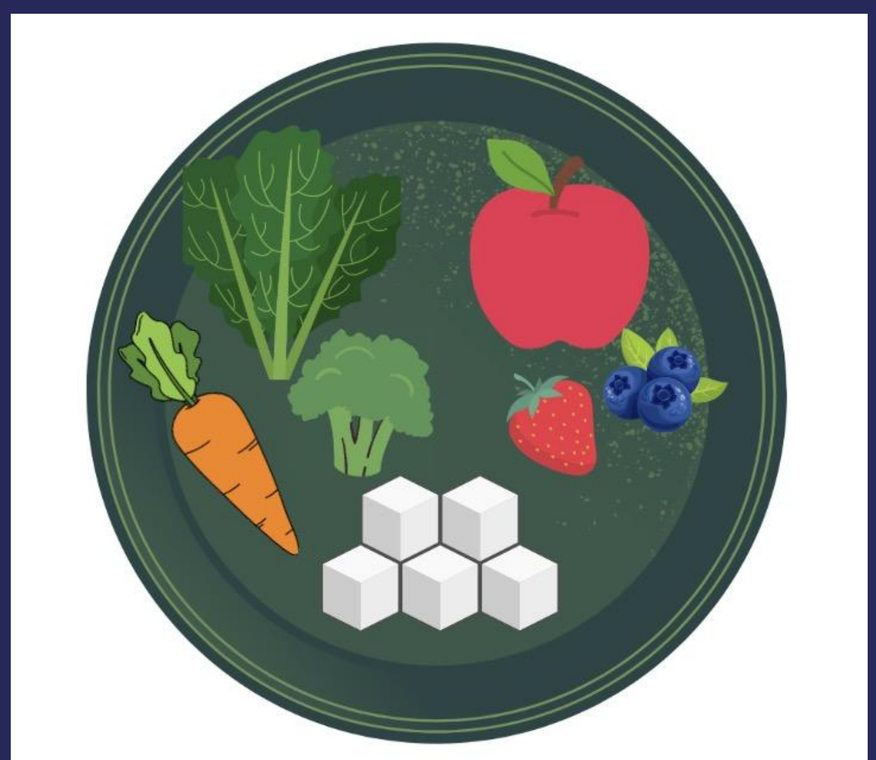
Measures

- 24-hour Food Recalls
- National Institute of Health (NIH) Toolbox
- Kiddie Continuous Performance Test (K-CPT)
- Behavior Rating Inventory of Executive Functioning (BRIEF, Parent report)

Results

- More fruit consumption was related to better EF on the K-CPT (i.e., less omission errors; β = -0.16) and parent ratings (β = -0.19)
- More whole fruits were related to better EF on the K-CPT (i.e., less omission errors; β = -0.16) and parent ratings (β = -0.14).
- More vegetables were related to better EF on the Flanker (β = 0.16), K-CPT (i.e., less commission errors; β = -0.18), and parent ratings (β = -0.15)
- More added sugars were related to better EF on the Flanker (β = 0.21) and K-CPT (i.e., less commission errors; β = -0.14)
- No ADHD diagnosis moderations

Whole fruits and vegetables support executive functioning development in young children, and added sugars may not be as bad as they seem.



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Discussion

- FVs seem to support EF in young children.
- Surprisingly, no detrimental associations were found for added sugar (instead, some positive links with EF performance were found).
- Longitudinal studies are needed to better examine the effects of FVs/added sugars on EF across development for children with ADHD.

Figure

Figure 1. Fruits, Vegetables, and Added Sugars Predicting EF

	EF Scores	
	β	*p*
NIH: Flanker		
Fruits	0.27	.688
Whole Fruits	0.10	.124
Veggies	0.16	.017*
Added Sugars	0.21	.002**
Omissions:		
Fruits	-0.16	.017*
Whole Fruits	-0.16	.014*
Veggies	-0.07	.329
Added Sugars	-0.06	.368
Commissions:		
Fruits	-0.00	.981
Whole Fruits	-0.02	.721
Veggies	-0.09	.197
Added Sugars	-0.14	.035*
BRIEF (Parent):		
Fruits	-0.19	.007**
Whole Fruits	-0.14	.042*
Veggies	-0.15	.027*
Added Sugars	-0.10	.142

Note. *p < .05. **p < .01. ***p < .001.

CONTACT INFORMATION

Margaret Johansson, B.S.
E-mail: mjohanss@fiu.edu
Lab Website: http://self-regulationlab.fiu.edu
Instagram: @selfregulationlab

@SELFREGULATIONLAB