Research Within Reach, Ep. 7: The Role of Cognitive Stimulation on Obesity

*Can cognitive stimulation affect a child’s physical health?*

**Introduction**

Childhood obesity is linked with severe health risks, both immediately and in the future. According to the CDC, these risks include: diabetes, asthma, sleep apnea, fatty liver, joint problems, and more. There are also social-emotional risks associated with childhood obesity, including anxiety and depression, low self-esteem, and bullying.

Nationally, approximately 8.9% of children aged 2-5 are obese. For low-income children, the rate is 15%. For children in Head Start, the rate is 17.9%. In a recent study, researchers Saskia Op de Bosch and Helena Duch examined the relationship between children’s home environment and their weight. Their focus was on the level of cognitive stimulation at home and how much junk food children ate, how much physical activity they got, and their BMI (body mass index).

**The Basics:**

Saskia Op de Bosch and Helena Duch used data from the Family and Child Experiences Survey (FACES) 2006 to expand our understanding of the relationship between children’s home environments and their weight. While they did not find a relationship between levels of cognitive stimulation at home and BMI, they did find some relationship between a children’s level of cognitive stimulation at home and the likelihood of them eating junk food and of getting physical activity.

**The Results:**

Bosch and Duch tested three specific relationships and found...

- … a contradictory result around levels of cognitive stimulation and likelihood of eating junk food. Children experiencing moderate levels of stimulation were less likely to consume junk food, but they didn’t find a similar association for children experiencing high levels of stimulation.
- … a strong association between levels of cognitive stimulation and likelihood of being physically active. Children experiencing moderate levels of stimulation were twice as likely to be active than children experiencing low levels of stimulation. Children experiencing high levels of stimulation were three times as likely to be active than children experiencing low levels of stimulation.
- … no relationship between levels of cognitive stimulation and BMI at the end of kindergarten.

**The Implications:**
This research contributes additional information about how the early childhood field, and particularly the Head Start field, might target interventions to improve early childhood health and, more specifically, weight. Nutrition information and an emphasis on physical activity are important, but another way to address healthy weight is through support for the home environment and improving levels of parent-child engagement.

The Limitations:

- The measures that Bosch and Duch used are not perfect – they were able to convert existing questions from the FACES study into indicators for cognitive stimulation, junk food eating, and physical activity, but these are imperfect, and at times simplistic, indicators.
- The results of this study don’t align entirely with previous research on the topic. The findings definitely suggest that there is more to be discovered building off of previous research on the link between cognitive stimulation and obesity, but more research is needed to see which of the results hold up.

The Methodology:

The Sample:

- A nationally representative sample of 1905 children and their families from FACES 2006.

The Measures:

- Levels of Cognitive Stimulation: Questions from FACES 2006 matched to the Home Observation Measurement of the Environment-Short Form (HOME-SF)
- Junk Food Consumption: Parent report of how much junk food the child eats each week (includes "sugary snacks; cookies, cakes, and brownies; fast food; and salty snacks").
- Physical Activity: Whether or not a parent took their child to a playground/park and to a game/sport/exercise activity in the past week.
- BMI: Z-scores of BMI.
- Demographics: Maternal education, child birth weight, race, age, and gender.

The Analysis:

- The relationship between cognitive stimulation and junk food was measured using a multinomial logistic regression.
- The relationship between cognitive stimulation and physical activity was measured using a binary logistic regression.
- The relationship between cognitive stimulation and BMI was studied by cross tabulation with a chi-squared test of independence of variable distribution and then confirmed by logistic regression.