

Positive Impact on Children's Weight

# School Environment



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**Changes in Weight Over the School Year and  
Summer Vacation: Results of a 5-Year  
Longitudinal Study**

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# Moreno's, et al, Conclusion

*"The school environment has a positive impact on the weight status of children who enter kindergarten, especially for those who are overweight or obese."*

# Why Focus on the Schools?

Most interventions to promote a healthy weight for children are focused on the schools.

i Schools have:

- Access to children and parents
- Education models promoting health education and physical activity

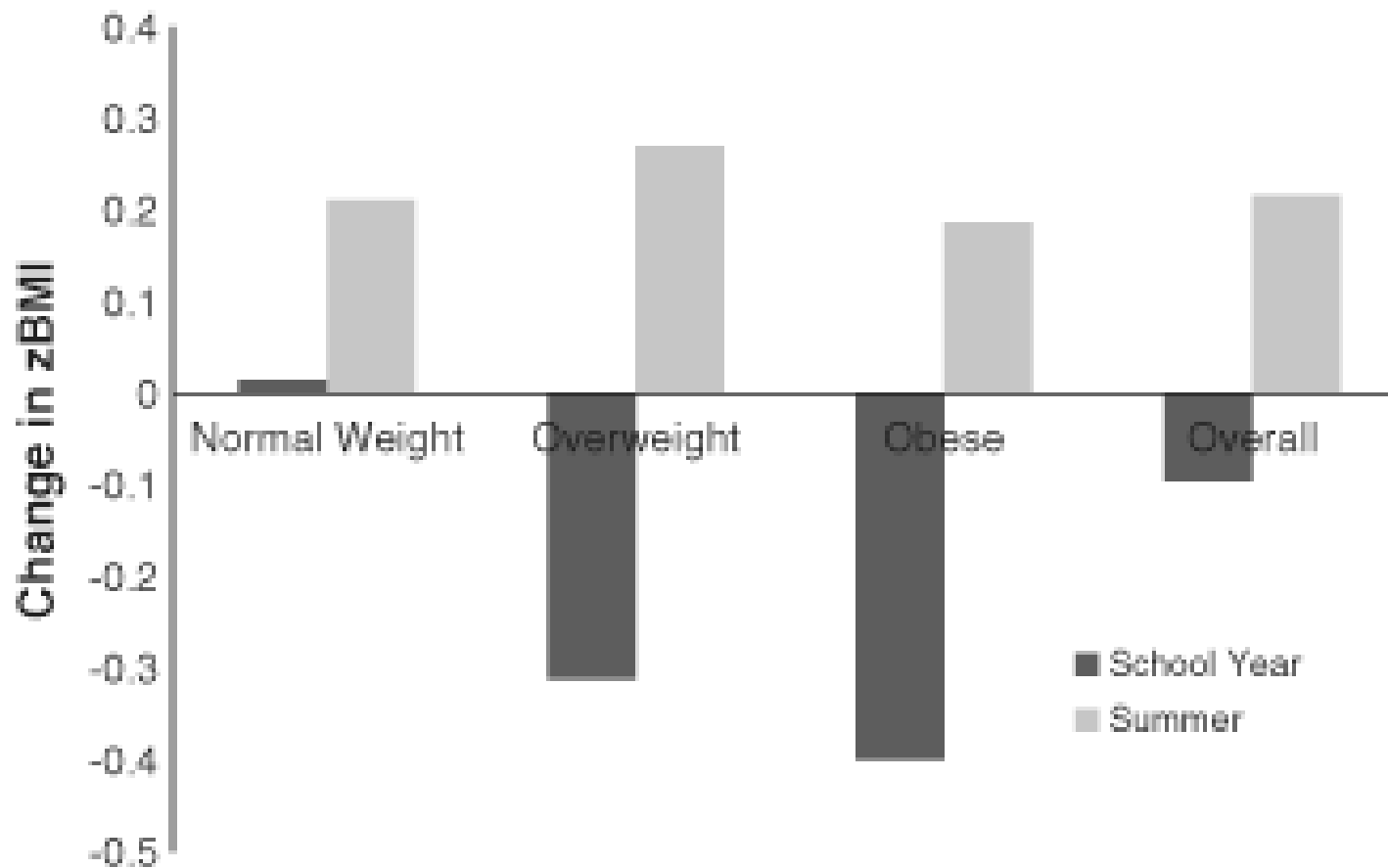
# School Meals Have Positive Impact

- i Moreno's, et al, study provides evidence that health promotion in the National School Lunch Program and the policies and practices of increasing physical activity, have a positive impact on the children.

# Intervention Needed During Summer

- i To address the negative effect of summer on weight gain, health promotion programs are needed during the summer months, for elementary school-aged children.

# Changes in Weight Over the School Year and Summer Vacation: Results of a 5-Year Longitudinal Study



# ABSTRACT, Moreno, et al

## BACKGROUND

- i Evidence suggests that children gain more weight during the summer months compared with the school year. To examine the impact of the school and summer environment on children's weight further, we conducted a 5-year longitudinal study examining changes in standardized BMI (zBMI) of students entering kindergarten.



## METHODS

- i Heights and weights were obtained at the beginning and end of each school year for 3,588 ethnically diverse (Caucasian: 27.2%, Black: 29.0%, Hispanic: 26.4%, and Asian 17.4%) students aged 5-7.

## RESULTS

- i A significant difference in change in zBMI during the school and summer months was found ( $-0.52$ , 95% CI:  $-0.59$  to  $-0.45$ ,  $p < .001$ ; Wald  $\chi^2 = 171.89$ ,  $p < .001$ ). Overall, children decreased BMI percentile during time spent in school by 1.5 percentile points and increased by 5.2 percentile points during summer months. Differences in the velocity of weight gain were found across weight classification categories with only overweight and obese children decreasing their zBMI during the school year.

## CONCLUSION

- i Time spent in school was shown to have a beneficial impact on students' weight, especially for students who were overweight or obese. However, these results are alarming because weight gain during elementary school occurs primarily during the relatively short span of summer break.

# Weight Gain Occurs During Summer

*“Elementary students experience a significant increase in the velocity of weight gain during summer break compared with the school year.”*

# Healthier Body Weight During School Year

*Overweight and obese students experiencing accelerated weight gains during summer and obtaining healthier weights during the school year."*

*Overweight children decreased zBMI about as much during the school months as they increased zBMI during summer, thereby remaining relatively stable in terms of weight status."*

# Obese Children Decrease BMI @ School

*Obese children decreased zBMI significantly more during the school year and gained about half of this decrease back over the summer."*

# Obesity Problem Continues

*“Despite a downward trend in weight status, a large majority of these students remained in the obese range (77.5%).”*



# Normal Weight Children Gain More in Summer

*Normal-weight children appeared to be on an upward trend, gaining weight at an accelerated rate both during the school year and summer, though this rate of gain was greater in summer."*

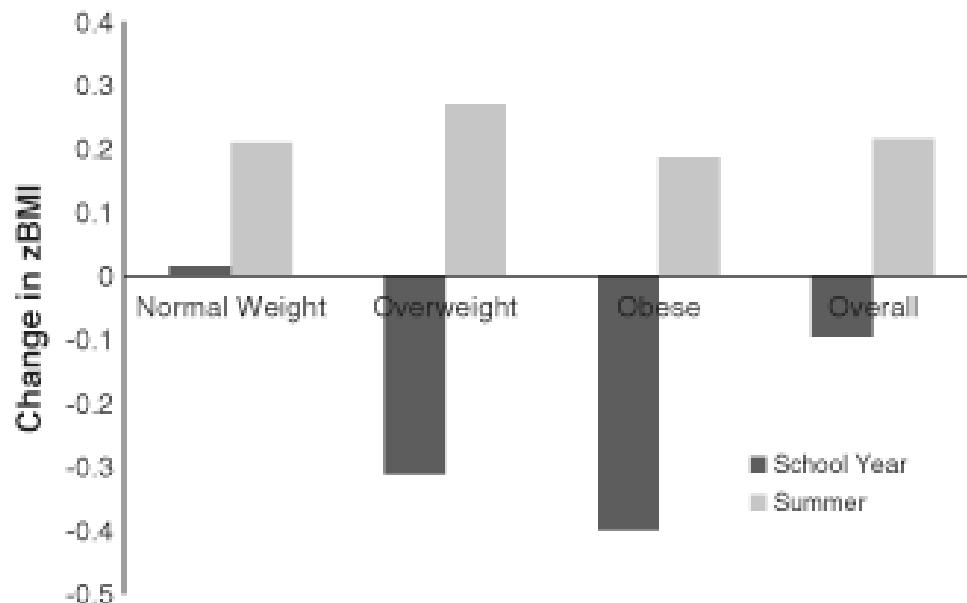
*“Children who changed weight classifications, those who increased weight classification increased zBMI during both school and summer, but gains were greater during the summer.”*

*Children who maintained their weight classification decreased zBMI during the school year and increased zBMI during the summer.*

*“Children who decreased their zBMI decreased during both time periods; however, decreases were greater during the school year.”*

# School Environment Promotes Weight Loss

*“The school environment promoted weight loss, whereas the environment during summer vacation led to accelerated weight gain.”*



# School Environment Protects

The school environment has a protective effect against weight gain.

Moreno states:

*“This is interesting in light of the criticism that schools receive regarding health promotion.”*

# Why the School Environment is Protective

- Improved nutritional quality of school meals.
- School lunch provides students with the majority of their daily intake of nutrient-dense fruits and vegetables.
- Implemented District Wellness policies.
- Improved the nutritional quality of competitive meals and the contents of vending machines.
- Students who eat school lunch consume less sugar and soda than students not consuming the school meals.
- Students have access to physical education, sports, recess, intramurals, and afterschool programs.
- The structure and routine of a school day promotes a healthier lifestyle.

1. In Moreno's, et al, study, it showed that the school environment promotes a healthier weight in children.
2. Summer break promotes more rapid weight gain.
3. More focus and intervention needs to occur outside of the school environment.



# The End

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Research article may be found on Wiley Online Library

Abstract may be found at:

<http://onlinelibrary.wiley.com/doi/10.1111/josh.12054/abstract>