

PUBLICATIONS

Impact of a school based pediatric obesity prevention program facilitated by health professionals.

Johnston, C. A., Moreno, J. P., El-Mubasher, A., Gallagher, M., Tyler, C., & Woehler, D.

Background: This study evaluated a school-based obesity intervention for elementary school children ($N=835$) where health professionals assisted teachers integrate healthy messages into the school curriculum.

Methods: Schools were randomized into professional-facilitated intervention (PFI; $N=4$) or a self-help (SH; $N=3$) condition. Changes in weight-based outcomes were assessed in students enrolled in the 2nd grade from all 7 schools (overall: $N=835$ students; PFI: $N=509$ students, SH: $N=326$ students). Students were between ages 7 and 9 and from diverse ethnic backgrounds (Asian=25.3%, Black=23.3%, Hispanic=23.1%, White=28.3%). The sample included 321 overweight/obese ($BMI \geq 85^{\text{th}}$ percentile), 477 normal weight ($BMI \geq 5^{\text{th}}$ percentile and $<85^{\text{th}}$ percentile) and 37 underweight ($BMI <5^{\text{th}}$ percentile) students.

Results: After two years, children who were overweight/obese, in the PFI condition significantly reduced their standardized BMI (zBMI) compared to children in the SH condition (Wald $\chi^2=28.7$, $p<.001$). End of year grades decreased for overweight/obese students in both conditions; however, students in the PFI exhibited a smaller decrease in grades compared to the SH condition (Wald $\chi^2=80.3$, $p<.001$).

Conclusion: The results indicate that an obesity prevention program where health professionals assist teachers by integrating healthy messages into existing curriculum was effective in reducing zBMI compared to the self-help condition.

Johnston, C. A., Moreno, J. P., El-Mubasher, A., Gallagher, M., Tyler, C., & Woehler, D. (in press). Impact of a school based pediatric obesity prevention program facilitated by health professionals. *Journal of School Health*.

Changes in weight over the school year and summer vacation: Results of a 5-year longitudinal study.

Moreno, J. P., Johnston, C. A., & Woehler, D.

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

Methods: Heights and weights were obtained at the beginning and end of each school year for 3588 ethnically diverse (Caucasian: 27.2%, Black: 29.0%, Hispanic: 26.4%, Asian 17.4%) students ages 5-7.

Results: A significant difference in change in zBMI during the school and summer months was found ($-.52$, 95% CI, $-.59$ through $-.45$, $p < .001$; 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: 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.

Moreno, J. P., Johnston, C. A., & Woehler, D. (in press). Changes in weight over the school year and summer vacation: Results of a 5-year longitudinal study. *Journal of School Health*.

School lunches and lunches brought from home: A comparative analysis.

Johnston, C. A., Moreno, J. P., El-Mubasher, A. A., & Woehler, D. L.

Background: Considerable effort has been put forth to improve the nutritional quality of school meals by the National School Lunch Program (NSLP). However, a large percentage of children do not obtain their meals from school and instead bring lunch from home. Little research has focused on the content of these lunches. The purpose of the current study was to examine differences between school lunch and lunch brought from home.

Methods: Children in the second grade from seven schools in a large suburban school district were observed on three separate days. A total of 2,107 observations were made with 38.5% of these being lunches brought from home. Chi square analyses evaluated differences in the presence of specific food items between school lunch and lunch brought from home.

Results: Compared to children with a school lunch, children with a lunch brought from home were significantly less likely to have fruits (75.9% vs. 45.3%), vegetables (29.1% vs. 13.2%), and dairy (70.0% vs. 41.8%) ($p < .001$). Children with a lunch from home were more likely to have snacks high in sugar and/or fat (17.5% vs. 60.0%) and non 100% fruit juice/fruit drink (0.3% vs. 47.2%) ($p < .001$) than children with a school lunch.

Conclusions: The NSLP has been widely criticized; however, conducting a comparison in this manner demonstrates advantages to children obtaining school lunches. Although it was beyond the scope of this study to examine diet quality (e.g., actual intake and nutrient/caloric density), these results provide compelling evidence that lunches brought from home should be an area of emphasis for research and intervention.

Johnston, C. A., Moreno, J. P., El-Mubasher, A. A., & Woehler, D. L. (2012). School lunches and lunches brought from home: A comparative analysis. *Childhood Obesity*, 8(4), 364-368.

PRESENTATIONS

Johnston, C. A. (2012, October). *Inclusion of peers to model and support healthy changes*. To be presented at the 86th annual meeting of the American School Health Association, San Antonio, TX.

- Johnston, C. A., Moreno, J. P., El-Mubasher, A., Papaioannou, M. A., & Woehler, D. L. (2012, September). *School-based obesity intervention: Inclusion of peers*. To be presented at the 30th Annual Scientific Meeting of the Obesity Society, San Antonio, TX.
- Johnston, C. A., Moreno, J. P., Stansberry, S. A., El-Mubasher, A. A., Foreyt, J. P., & Woehler, D. L. (2011, April). [*Obesity is associated with decreased academic performance in elementary school students*](#). Presented at the American Society for Nutrition (ASN) Scientific Sessions and Annual Meeting at Experimental Biology, Washington D.C.
- Johnston, C. A., & Woehler D. (2010, October). *Assessing readiness to change at the school level*. Presented at the annual meeting of the American Academy of Pediatrics, San Francisco, CA.
- Johnston, C. A., & Woehler, D. (2009, June). *The Oliver Foundation Kids Team in Ft. Bend ISD: A six year longitudinal study of BMI trends among elementary school children in healthy school environments*. Presented at the Texas Association of School Nurses annual conference, Houston, TX.
- Moreno, J. P., Johnston, C. A., Brooks, S., Silberstein, L., Woehler, D., & Foreyt, J. P. (2011, October). [*Changes in weight over the school year and summer vacation: Results of a 5-year longitudinal study*](#). Poster presented at the 29th Annual Scientific Meeting of The Obesity Society, Orlando, FL.
- Moreno, J. P., El-Mubasher, A., Johnston, C. A., Papaioannou, M. A., Holmes, C., Woehler, D., Foreyt, J. P. (2011, October). [*Packed lunches compared to school lunches*](#). Poster presented at the 29th Annual Scientific Meeting of The Obesity Society, Orlando, FL.