New York City Public Schools:

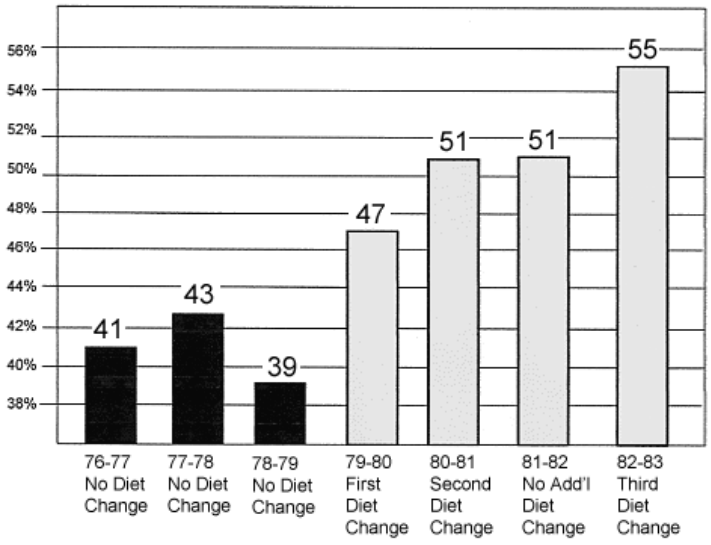
Four Years of Success

In the spring of 1979, New York City's public schools ranked in the 39th percentile on standardized California Achievement Test scores given nationwide. That means that 61 percent of the nation's public schools scored higher. They had been in the lower half of the country for years. However, for a few years in the 1980s, these same 803 schools ranked in the upper half of the nation's schools. They went from 11% below the national average to 5% above it. What happened?

In the fall of 1979, the city's Board of Education decided to make some changes in their lunch and breakfast program. They ordered a reduction in sugar (and this would reduce dependence on prepackaged foods) and they banned two artificial food colorings. In the next set of achievement tests, the schools averaged in the 47th percentile – an increase five times larger than any other documented increase. Dr. Elizabeth Cagan, Chief Administrator of the Office of School Food and Nutrition of the New York City Board of Education, and the researcher Dr. Stephen Schoenthaler, studied the changes occurring during these years.

National Rankings of 803 New York City Public Schools Before and After Diet Changes

Percentile Rankings based on CAT Scores



As they implemented changes bringing the school lunch and breakfast programs in line with "stage two" of the Feingold Diet – eliminating artificial flavoring and coloring, as well as the BHA, and BHT preservatives – school scores rose to the 55th percentile. This was a total rise of almost 16%, in a cohort of over a million children. Moreover, when the changes were analyzed, a dramatic difference was found in the ratio of change to amount of food eaten at school. Before these changes, the more school meals the children ate, the worse their scores. After the changes, this reversed: the more school meals the children ate, the better they did academically.

And that is not all – when Dr. Schoenthaler looked at which children had made such dramatic changes that the entire school system improved, he found that it was not uniform. Not *all* children made a 16% improvement. Rather, the lowest achievers improved the most. In 1979, before implementing the dietary changes, 12.4% of the one million students in New York City schools were performing two or more grades below the proper level. These were the "learning disabled" and "repeat failure" children. By the end of 1983, only 4.9% of children were in that category. In other words, 7.5% of a million children – 75,000 children – were no longer "learning disabled" low-achievers, but had become able to perform at the level normal for their age. These were the children that no other efforts had helped. No other hypothesis fits: all changes were related to the dietary changes.

What about the placebo effect – could that have explained it?

Dr. Schoenthaler analyzed this possibility, in detail, but came to the conclusion that it was not possible. A placebo effect would take place immediately and wear off. This did not happen. A placebo effect cannot explain the reversal in the correlation of children's scores with amount of food eaten at school. Several other

possible explanations were evaluated and rejected as not possible because they, too, simply do not fit the facts. The dietary change explanation, on the other hand, fits every fact observed.

A close look at the graph of student scores reveals two other interesting facts: Looking at the highest black bar, one could wonder if something had happened that year, too. Indeed it had – the school had attempted to reduce fat in the school food. Again, this would decrease their dependence on prepackaged foods (usually heavily laced with additives, as well as fat), and the effort brought a modest rise in scores. The next year that effort was abandoned – and the scores again dropped. What about 1981-82? Why does the level remain "stuck" at the 51%? That year, no further dietary changes had been introduced. The food available to the children remained the same, and their academic results also remained the same. The following year, when the food was improved by elimination of the petroleum-based preservatives BHA and BHT, average scores rose again -- to well above the national average.

> No other school district could be located which reported such a large gain above the rest of the nation so quickly in a large population.
>
> *- Dr. S. Schoenthaler*

See more about how other schools are helping their students by improving their lunch program – and how you can help your child's school do the same – at the website www.school-lunch.org

See more about recipes recommended for U.S. schools at teamnutrition.usda.gov/Resources/usda_recipes.html

See the American Academy of Pediatrics Policy Statement on Soft Drinks in Schools at portal.nysed.gov/portal/page/pref/CNKC/IntDocs/152.pdf

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1. **Schoenthaler**, SJ, Doraz WE, Wakefield JA. 1986 – The Impact of a Low Food Additive and Sucrose Diet on Academic Performance in 803 New York City Public Schools, *International Journal of Biosocial Research,* Vol. 8(2): 185-195
2. **Schoenthaler**, SJ, Doraz WE, Wakefield JA. 1986a – The Testing of Various Hypotheses as Explanations for the Gains in National Standardized Academic Test Scores in the 1978-1983 New York City Nutrition Policy Modification Project, *International Journal of Biosocial Research,* Vol. 8(2): 196-203