

Data Request: Changes in Fruit/Vegetable Consumption After Implementation of Farm to School (FTS) Grants

Vermont Youth Risk Behavior Survey (YRBS)

28 August 2017

Data Background/Limitations

The Vermont Youth Risk Behavior Survey (YRBS) asks high schoolers about the quantity and type of fruits and vegetables consumed daily. As these questions are only asked of high schoolers, they do not include any data pertaining to elementary or middle schools and are therefore only a subset of all Agency of Agriculture – Food & Markets, Farm to School (FTS) implementation grant recipients. Therefore, as an outcome measure, these data give only partial measurement of FTS activity.

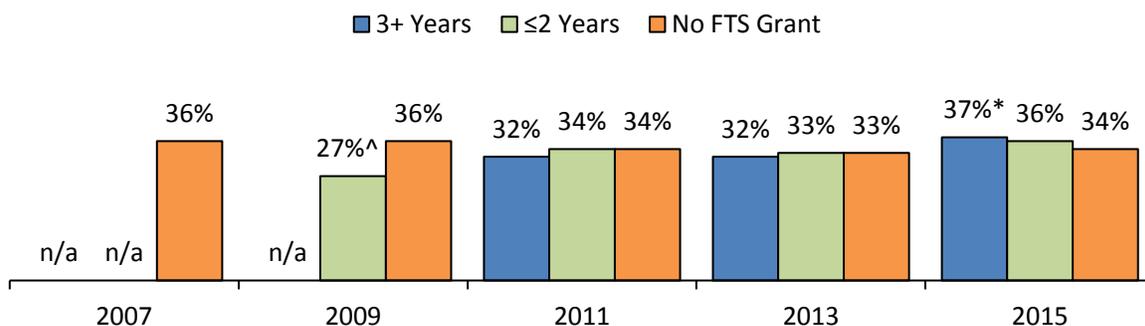
Rates of consumption of two or more fruits a day and three or more vegetables a day were calculated by time since having had a FTS grant (2 or fewer years ago, 3 or more years ago, or never), based on having had a grant prior to 2015. Data were additionally analyzed to present the actual change in the magnitude of fruit and vegetable consumption from one survey year to the next (every other year) to further characterize the change in fruit and vegetable consumption, overall, among grantees. For the change from 2011 to 2013, FTS schools were considered as those having had a FTS implementation grant prior to 2013. The difference in the proportions of fruit and vegetable consumption in both FTS schools and Non-FTS schools were calculated. For the change from 2013 to 2015, FTS schools were defined as those having had a FTS grant prior to 2015.

These data do not account for the differences in the unique FTS implementation at each school, which may have different effects on the nutrition environment and therefore would have a different impact on the outcome of increasing fruit and vegetable consumption. Further, students represented in each year change as every year seniors leave the school and an incoming freshman class enters high school, thus changing the makeup of the student body. This potentially introduces some error in the use of these data as measurement of an overall outcome.

Changes in Fruit Consumption

In 2015, students in schools who had a FTS grant three or more years ago were significantly more likely to consume two or more fruits a day (37%) than students in schools who did not have an FTS implementation grant (34%). In 2009, students in schools who received the FTS implementation grant award two or fewer years ago were significantly less likely to consume two or more fruits a day (27%) than students in schools who did not have a FTS grant (36%).

**Consumption of 2+ Fruits a Day among Vermont High School Students
by Length of Time Since FTS Implementation Grant Award**



Data Source: Vermont YRBS 2007-2015.

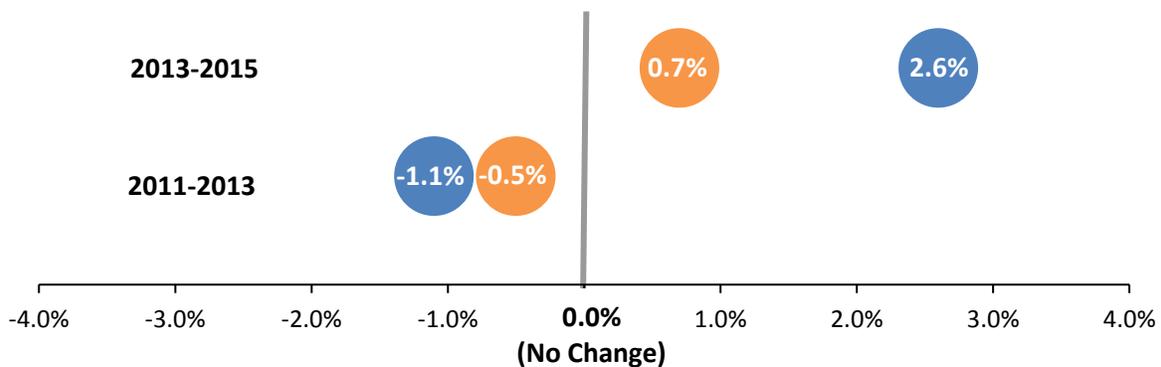
(*) Notes statistical difference between 3+ years and No FTS Grant.

(^) Notes Statistical difference between ≤2 years and No FTS Grant.

Due to methodology changes to the YRBS between 2009 and 2011, comparisons pre- and post- 2011 should be made with caution.

Overall, between 2011 and 2013, students in schools who had ever received a FTS implementation grant prior to 2013 significantly decreased their consumption of two or more fruits a day by 1.1%, where students in schools who had not ever had a FTS grant significantly decreased their consumption by 0.5%, a statistically significant difference between students in FTS schools and Non-FTS schools. Notably, from 2013 to 2015 students in schools who ever had a FTS grant prior to 2015 significantly increased their consumption of two or more fruits a day by 2.6% where students in schools that did not have a FTS grant increased their consumption by 0.7%, a significantly smaller increase than FTS schools. Reported changes should be treated with caution as a wide variation in the magnitude and direction of change was noted among FTS schools.

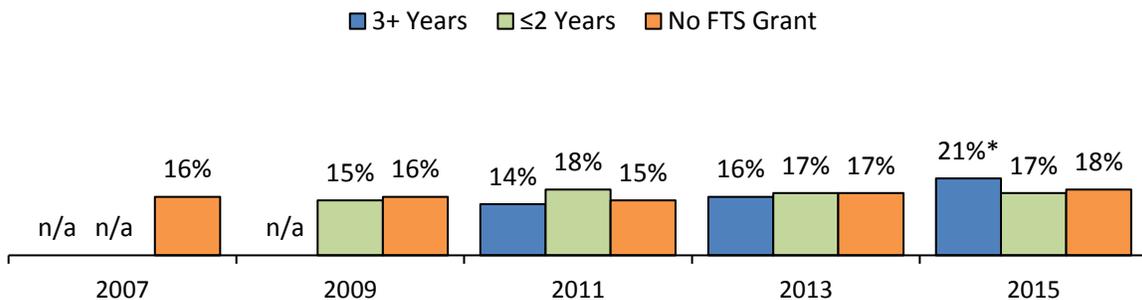
Change in Recommended Daily Consumption of Fruit Between Years By Grantee Status among Students in FTS Schools and Non-FTS Schools



Changes in Vegetable Consumption

In 2015, students in schools who had a FTS implementation grant three or more years ago were significantly more likely to consume three or more vegetables a day (21%) than students in schools who did not have a FTS implementation grant (18%).

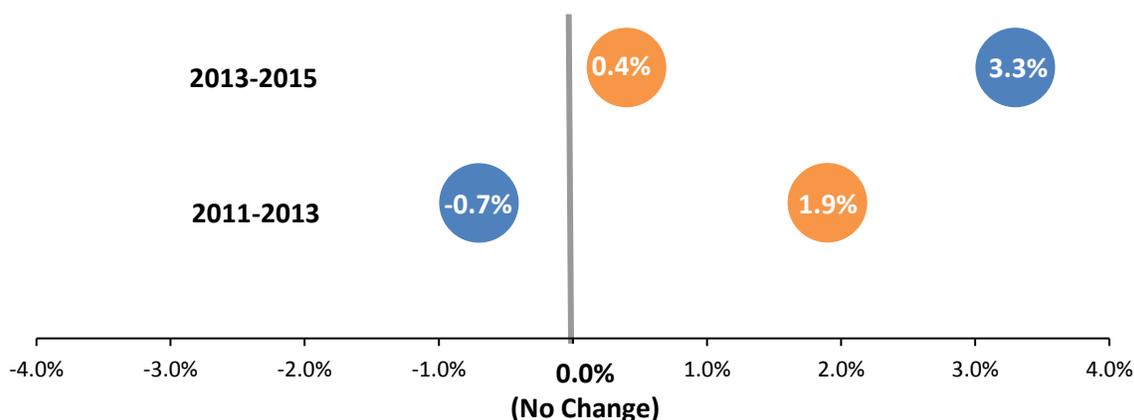
Consumption of 3+ Vegetables a Day among Vermont High Schools by Length of Time Since FTS Implementation Grant Award



Due to methodology changes to the YRBS between 2009 and 2011, comparisons pre- and post- 2011 should be made with caution.

Overall, between 2011 and 2013, students in schools who had ever received a FTS implementation grant prior to 2013 decreased their consumption of three or more vegetables a day by 0.7%, while students in schools who had not had a FTS grant increased their consumption by 1.9%, the difference in the changes between FTS schools and Non-FTS schools is statistically significant. From 2013 to 2015, students in schools who ever had a FTS grant prior to 2015 significantly increased their consumption of three or more vegetables a day by 3.3% where students in Non-FTS schools increased their consumption by 0.4%, a significantly smaller increase than that seen among FTS schools. Reported changes should be treated with caution as a wide variation in the magnitude and direction of change was noted among FTS schools.

Change in Recommended Daily Consumption of Vegetables Between Years, By Grantee Status among FTS Schools and Non-FTS Schools



Data Source: Vermont YRBS 2011-2015

Concluding Thoughts

Data from 2015 shows promising results, though it is different than seen in previous years. These data are encouraging that FTS efforts are potentially yielding results however it is difficult to say definitively as FTS activities occur in elementary and middle schools as well and those data are not represented here. Though consumption of three or more vegetables a day occurs at a lower rate, the change in vegetable consumption is more pronounced than that among fruits at FTS high schools. Given the level of fluctuation in these data, and the fact that grant management was improved starting in 2014, adding an additional year of data, when available, would be advisable to determine if the 2015 rates are evidence of a progressing trend or random fluctuation, as seen in previous years.

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