

« F&V AT SCHOOL : A WORLDWIDE CONCERN »

Editorial

The importance of increase fruit and vegetable consumption in children (and their families)

Increasing fruit and vegetables consumption in children is one of the major issue in the field of nutritional education programmes worldwide and several projects have been developed with this aim. Most of the approaches have used the school as a main setting, while a few approaches have also included the family. Some of the programmes have offered free fruit, while some others have asked for an active contribution by the families. Many of these programmes have used an educational and healthy approach, but very few, if any, have used an emotional approach, insisting on the pleasure of a healthy eating.

Many of the projects have been directed to primary school age children and only a few toward younger children. Some of the programmes have used what is called "accessory measures" which have been demonstrated as being important in improving children's fruit and vegetables intake. All of these research approaches have resulted in positive outcome at different rate of success, but none of them has shown substantial positive long lasting results. Thus, we have to understand that while we are doing something positive in this field, we need to substantially improve our approach.

In general the distribution of F&V at schools, coupled to accompanying measures, is a positive initiative to start children to become used the taste of fruit and vegetables. In Europe this initiative has been in place for a few years, but there is no long term data yet, and where there is data it has not been gathered uniformly in each European country. While the preliminary data we do have in Europe is encouraging, it will be important over the longer term to find the tools necessary to ensure the mandatory monitoring of activities to enable analysis and continual programme improvement.

We probably need to apply some of the procedures taken from all the already performed projects and create a new whole approach programme. What we really need to do is to create in our children the emotional pleasure of eating fruit and vegetables, including all the actors present in a child's life such as parents, teachers, friends and lifestyle models. This is because a behaviour built only on knowledge - such as the nutritional education based on the content of nutrients - hardly lasts over the longer term.

Last, but probably the most important aspect if we want to modify children's behaviours, is that we need to start since infancy to create the "customer fidelity" to a healthy eating.

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Vegetable and Fruit Breaks in Australian Primary Schools

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Background

Systematic reviews have consistently reported that multi-strategic school-based vegetable and fruit interventions can increase children's daily serves of vegetables and fruit¹⁻³. National distribution schemes which provide free vegetables and fruit to students at school have been implemented in a number of countries⁴⁻⁶. As an alternative to such distribution programs, in Australia, the Australian Government launched in April 2005, the "Go for 2&5[®]" campaign; a social marketing campaign and program to increase consumption of vegetables and fruit in the general population. The campaign was part of the Building Healthy, Active Australia initiative to address overweight and obesity. To support the "Go for 2&5[®]" campaign Australian Primary schools were encouraged to implement a vegetable and fruit program called Crunch&Sip[®]; a time in class for children to consume a piece of vegetable or fruit that they had brought from home⁷. Schools were recommended to implement the program in at least 80% of school classes on every school day. To support the establishment and sustainability of the program, schools were also encouraged to implement supportive school policies, curriculum material and parent communication strategies. Resources were made available to facilitate the implementation of these strategies⁸.



Adoption of vegetable and fruit breaks within Australia

While the campaign is a nation-wide initiative of the Federal Government, to date, only the states of Western Australia, South Australia and New South have officially adopted the program. In these states funding has been provided to various Government and non-Government agencies to support schools to implement the program. As a result almost 1,000 primary (children five to twelve years of age) and central (children five to eighteen years of age) schools⁸ across the three states have received "certification" by the program as having a vegetable and fruit

break in at least 80% of classes every school day and have a school policy supporting the program.

That is not to say, however, that more Australian schools have not also adopted "veg and fruit breaks". Anecdotally vegetable and fruit breaks have been occurring in primary and central schools across Australia for a number of years; as schools have acknowledged the beneficial effects such breaks have for children's concentration and behaviour while in class.

While no national survey has been undertaken, our recent vegetable and fruit break prevalence study in New South Wales⁹ found that 62% of the 384 primary and central school principals surveyed, were implementing a vegetable and fruit break. Encouragingly, the results of our study also found that schools in rural or less socioeconomically advantaged areas have the highest rates of program adoption, indicating that such programs may be effective for reaching children most at risk.

Moreover, principals were highly supportive of vegetable and fruit breaks, with 86.7% reporting that it is appropriate for schools to implement vegetable and fruit breaks. The extent to which these findings can be generalised across other state and territories school systems is unknown; however it is an encouraging indication of Australian school adoption and acceptance of the program.

Where to next?

If the public health benefit of vegetable and fruit breaks for young people are to be realised the number of schools implementing such programs in Australian schools needs to be maximised. Our prevalence study identified that when controlling for all school characteristics, recommended vegetable and fruit break adoption was 1.9 and 2.2 times greater respectively in schools that had parent communication strategies and trained teachers. Thus, policy makers and practitioners interested in facilitating the adoption of vegetable and fruit breaks could therefore ensure that schools can access such support.

* *Crunch&Sip[®] was developed by the Western Australian Department of Health. Which was adapted from the Great Southern Public Health Service and the Albany and Narrogin District Education Offices Fruit & Water Policy in Schools Project. Healthway funded the pilot project.*

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U.S. Fresh Fruit and Vegetable Program: A Win for Children, Schools, Public Health and Agriculture

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The goal of the United States Fresh Fruit and Vegetable Program (FFVP) is to increase low-income elementary school student's fruit and vegetable consumption by providing a free fresh fruit and vegetable snack to all students every day. The FFVP, started as a pilot in 2002, became a national program in 2008. The FFVP is currently implemented in more than 4,600 elementary schools; benefiting over three million children every day. For the last 10 years the FFVP has become a model for increasing children's fruit and vegetable consumption and a catalyst for creating healthier school food environments.

Designed to Address Public Health Priorities

The FFVP was designed to address two major US public health priorities: (1) American children were eating less than 50% of the fruits and vegetables recommended for good health by the US Dietary Guidelines; and (2) the US has a childhood obesity epidemic.

Children in low-income households are more likely to have the lowest intake of fruits and vegetables and be at the greatest risk of poor health outcomes; therefore increasing fruit and vegetable intake in this population and improving their overall dietary habits, is likely to confer the greatest long-term health benefits. As an environmental change, the FFVP increases availability and access to fresh fruits and vegetables in the school environment, exposes children to a wide variety of nutrient-dense fresh fruits and vegetables in a positive setting, serves as a model for other school-based Wellness Policies and improves fruit and vegetable consumption at school lunch.

Funding

The 2008 US Farm Bill provided \$1.2 Billion for the FFVP. Public Health and produce industry organizations collaborated together to ensure that US Agricultural policy, as established in our Farm Bills, began to align with US public health policy. Currently, the US Congress is debating the 2012 Farm Bill. Therefore, a top nutrition policy priority is to protect the funding and integrity of the FFVP, especially in these times of budget deficits.

Policy

One of the hallmarks of the US FFVP is that only fresh fruits and vegetables can be provided to students as snacks. Each individual

elementary school decides what **fresh** fruits and vegetables to serve and where to purchase them and many schools purchase from local growers when in season. Elementary schools apply to participate in the FFVP (because national funding is not adequate yet to support all low-income elementary schools); the application process ensures that schools are committed to effective implementation. Schools receive \$50-75/student/year to provide the fresh fruit and vegetable snack daily. The United States Department of Agriculture administers the FFVP. FFVP funding is in high demand; many more elementary schools would participate if additional funding was available.

Effectiveness

The FFVP increased the average fruit and vegetable consumption by 15% in participating schools, according to an independent evaluation conducted by Abt Associates during SY'2010-11. The FFVP did not increase total caloric intake, suggesting that the increased fruit and vegetable consumption replaced consumption of other less nutrient dense foods. School officials have also noted that the FFVP has been effective in decreasing student purchases of soda, chips and candy. It has also increased fruit and vegetable consumption in the school lunch program, improved cognition, lengthened attention spans, and seen fewer visits by students to the school nurse. Parents have noted the positive influence the FFVP has on family eating habits, including children requesting specific fruits and vegetables to be served at home for meals and snacks.

National Focus on Improving Children's Fruit and Vegetable Consumption and Eating Habits

In 2009, First Lady Michelle Obama launched the Let's Move! initiative to reduce childhood obesity in the next 10 years. One of the main goals of Let's Move! is to increase children's fruit and vegetable intake, both in school nutrition programs and family meals and snacks. The First Lady's leadership has resulted in new nutrition standards that will double the amount of fruits and vegetables served daily at school lunch. Let's Move Salad Bars to Schools, another Let's Move! initiative, is demonstrating that school salad bars are another effective strategy to increase children's fruit and vegetable consumption. Doubling fruit and vegetable consumption among America's children's will require many school-based and community-based environmental and policy changes. The FFVP is one of those effective environmental strategies.



Fruit and vegetable improvements seen in New Zealand children in the Healthy Homework Pilot Study

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Combining the school and home environment

Nutrition and physical activity interventions in children mostly focus on the school setting; however, evidence suggests that children have greater access to unhealthy food and are less active at home^{1, 2}.

Funded by the Health Research Council, Healthy Homework is a school-based intervention, that was piloted in two New Zealand schools, with the lowest and highest decile ratings, in 2009 (four intervention, and four control classes). The main aim of the study was to improve dietary and physical activity behaviours in participating children (n=100; aged 9-11 years).

Healthy eating as your homework task- study design

In this study, we developed, implemented, and evaluated the first compulsory homework syllabus aimed at improving key health behaviours outside of school. Ten nutrition and physical activity-related health behaviours were identified, one of them being fruit and vegetable consumption. The programme consisted of a six-week homework schedule complemented by an in-class teaching unit, and was designed to support the achievement objectives associated with the New Zealand Health and Physical Education Curriculum.

The fruit and vegetable homework component was not only designed to increase general awareness and promotion relating to fruit and vegetable consumption, but more specifically to encourage students to actively consume the recommended servings i.e. at least two fruit servings and three vegetable servings each day for a week as part of their homework task. Tasks were designed to include family and parental involvement wherever possible, and also included a related question to encourage independent inquiry. Food diaries were used (i.e. four-days; two week days and two weekend days) to assess nutrition intake before and after the intervention. Food diary completion was part of the homework task and it was anticipated that the compliance and accuracy of recording would be adequate. Changes in fruit and vegetable consumption were compared within each group (intervention and control) and between groups pre and post intervention.

Increases in fruit and vegetable consumption shown

In the intervention group there was a significant increase in fruit and vegetable consumption between baseline and follow-up on the weekend (p=0.001). Fruit consumption increased by one half serve (0.5 to 1 serve); vegetable consumption increased by 1.5 serves (0.5 to 2.0). Upon comparison between intervention and control groups, a positive effect was shown for vegetable consumption on weekends (0.83 servings per day, 95% CI: 0.24-1.43; p = 0.007) and overall (0.45 servings per day, 95% CI: 0.09-0.82; p = 0.016), with no significant

effect on weekdays. No significant interactions with gender or school were observed.

Importance of findings

This increase in vegetable consumption represents an approximate 28% of the daily vegetable recommendation (three servings per day)³ and is a noteworthy finding. Our findings are comparable with those of other studies conducted with children but that have focused exclusively on fruit and vegetable intake, which show increases of 0.2-0.6 servings of fruit and vegetables post intervention^{4,5}. An improvement in fruit and vegetable consumption was one of the key priorities for the Healthy Homework initiative. Our favourable findings may represent small changes in the home environment that have the potential to extend to other healthy lifestyle patterns.



Future directions

A key question is whether the increase in vegetable consumption extended beyond the timeframe of the intervention, as a longer term follow-up period was not included in this pilot study. A larger Healthy Homework study is currently being conducted in 20 schools across both the North and South islands of New Zealand. A six-month follow-up period has been incorporated into this study, which will enable both short and long-term effects of the intervention to be determined. At this stage we believe that homework centred on health behaviours that includes family member participation and the home environment is a promising way to enhance fruit and vegetable consumption in children, among other health behaviours. Results from the larger study will hopefully verify this. Future investigations taking a similar approach of encouraging children to actively change their behaviour as a component of their homework to support any theory learned in class time are warranted.

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Health Promoting Schools in New Zealand provides Fruit and Leadership

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Much worldwide attention has been paid to the “obesity epidemic” and the potential impacts of this epidemic on young people and adults. In New Zealand, concern has been expressed about the “obesogenic food environment” in and around schools and research that shows poor student nutrition is associated with poor attendance, behaviour, and academic outcomes. This situation has led to debate about whether schools can be, or should be, used as vehicles for educating and/or regulating students to make healthy choices. Internationally, individual schools and national or regional agencies have put in place a range of initiatives that aim to use educational settings to promote healthy behaviours.

This paper describes some of the findings from a study of a school-based health education and promotion initiative, Fruit in Schools.

What is Fruit in Schools?

Fruit in Schools is a New Zealand initiative designed to improve health outcomes for students who attend schools serving low socio-economic communities (schools rated decile 1 or 2). Over time, all schools in the primary sector (students in Years 0 to 8) with decile 1 or 2 ratings were invited to join the initiative. Students at schools which opted to join Fruit in Schools were offered a piece of free daily fruit, and the schools were offered extra funding and support from agencies to promote healthy lifestyles.

In each school, a lead teacher was offered some classroom release time to oversee Fruit in Schools, and Fruit in Schools coordinators were employed by local health boards to work with clusters of schools. This and other support was focused around four national health priority areas: healthy eating, physical activity, smoke-free, and sun-smart (sun protection) behaviours. Schools could also add their own health priorities. The first phase of Fruit in Schools started in late 2005, and initiative was funded by the Ministry of Health in partnership with the Ministry of Education.

The future? Students leading the way

Students at schools which serve low socio-economic communities are more likely to experience poor longer-term health and education outcomes than their peers at other schools. The evaluation of Fruit in Schools showed that participating schools increased their focus on health and wellbeing in a way that created a “protective climate” around students. The findings presented in this paper are of scholarly significance because they add to an emerging evidence base about the utility of settings-based and ecological health promotion approaches in enhancing school culture and health and educational outcomes for students.

For participating schools, a key aspect of their “Healthy School” culture was the prioritisation of approaches that enabled students to lead and design actions that were cognisant of the interests of their peers and the unique nature of their school. Being a leader supported students to develop a sense of connection to school and community responsibility, and provided them with the sorts of knowledge, skills, and competencies they are likely to need in the future.

This discussion of student leadership approaches is not intended to down-play the importance of other forms of health promotion. Current good practice is to take a systems view and use multifaceted approaches to develop a range of strategies to address different aspects of the wider system. The use of community development processes that aim to educate and enable rather than regulate, within initiatives such as Fruit in Schools, are best viewed as one component of a wider strategy.

The question we need to be asking is not, “What is the most effective sole way of creating change?”, but “What is the best package of approaches and initiatives that are likely to impact on school culture and processes in ways that set young people up for a healthy future?” The study reported on in this paper suggests that supporting young people to lead the way is one key approach which can offer young people the opportunities and skills they need to take charge of their future.

The full report and references are available at 5aday.co.nz.

For more information on the current Fruit in Schools programme visit <http://www.unitedfresh.co.nz/unitedfreshinaction.html?id=5736>



BASED ON:

Boyd, S. (2011). Educating healthy citizens in New Zealand schools: Students leading the way. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, USA, April 8-12, 2011.