

Title of Intervention	APPLE (A Pilot Programme for Lifestyle and Exercise) Project
Website	http://www.otago.ac.nz/diabetes/research/apple.html
Intervention Strategies	Environments and Policies, Group Education
Purpose	'Prevent excessive weight gain in 5–12 year old children by enhancing opportunities for healthy eating and non-curricular physical activity.'
Populations	Elementary school children in Otago, New Zealand.
Settings	School-based, community-based
Partners	University of Otago, Edgar national centre for diabetes research, local sponsors.
Intervention Description	<p>"The APPLE project was designed to concentrate on approaches that would not involve an increased workload for teachers but use the schools as a physical base for community intervention." "The main intervention in both years was the provision of community activity coordinators attached to each intervention school. Their main role was to encourage all children to be a little more physically active every day by increasing the variety and opportunities for physical activity beyond that which was currently provided in each school. They were used to increase non-curricular activity at recess, lunchtimes, and after school, with a particular focus on less traditional sports and more lifestyle-based activities such as outdoor games, household chores, gardening, beach hikes, and children's games from different countries.'</p> <p>'Another intervention initiative included the development of a resource for teachers to facilitate short bursts of activity in class called "snacktivity" and the provision of cooled water filters to each intervention school.'</p> <p>Additional initiatives were nutrition based and focused on reducing the intake of sugary drinks and on increasing fruit and vegetable consumption. Students received science lessons highlighting the adverse health effects of sugary drinks. A healthy eating resource was developed and made available to all members of the intervention community. Finally, a novel interactive card game, "GoTri," was developed. GoTri simulated completing a triathlon, and students were provided with a starter set of cards. They then had to complete specific physical activities, often with friends or a family member, or to follow particular dietary guidelines to earn 10 "missing" cards. Once students had obtained a complete set, they were able to play the game against each other.'</p> <p>'The remaining activity intervention increased promotion and availability of a variety of sport and play equipment at school breaks to enhance the level of "free" play in intervention children.'</p>
Theory	Not mentioned

Resources required	Staff/Volunteers:	Activity Coordinators (0.5 full-time equivalent per school).
	Training:	3 Monthly seminars for Activity Coordinators.
	Technology:	Not mentioned
	Space:	Regular school classrooms and play areas.
	Budget:	\$23,518 (for 279 children) or \$858 per child. Full cost breakdown by intervention can be found in McAuley (2010).
	Intervention:	Water filters, GoTri game, sports equipment, vouchers and awards, water bottles, Dietary resource booklet (APPLE Bites), Snackativity resource for teachers, and advertising.
	Evaluation	Portable stadiometer, electronic scales, metal diameter tape, automated sphygmomanometer, short food questionnaire (SFQ), unidirectional Actical accelerometers, and Physical Activity Questionnaire for Older Children.
Evaluation	Design:	Quasi-experimental
	Methods and Measures:	Children from 4 intervention and 3 control schools underwent measurements of height, weight, waist circumference, blood pressure, diet, and physical activity at baseline and at 1 and 2 years. Intervention components included nutrition education that targeted reductions in sweetened drinks and increased fruit and vegetable intake; and activity coordinators who managed an activity program that focused on non-curricular lifestyle-based activities (e.g., community walks).'
Outcomes	Short term impact:	Children in the intervention group consumed fewer carbonated beverages and fruit juice/drink but more fruit after the intervention.
	Long term impact:	'Body mass index z score was significantly lower in intervention children than in control children after the first and second years, but the prevalence of overweight did not differ. Waist circumference was significantly lower at year 2, and systolic blood pressure was reduced at year 1.'
		'In children who were present for the full 2 year of intervention, the prevalence of overweight was significantly reduced.'
Maintenance	Varies by community follow-up choices. Most communities adopted new school health policies. One school chose to keep the Activities Coordinator, and others adopted other projects or campaigns.	

Lessons Learned	"Feedback from the school communities highlighted the importance of having an additional staff member dedicated to improving opportunities for activity for children, being a “face” for activity in the school, acting as a point of contact for parents and other community members to volunteer their time and expertise, being an initiator of ideas and activities, and contributing to the reported reduction in bullying in intervention schools."
	'It appears that age as well as parental and community involvement may be particularly relevant' for increase effect and longevity of results.
	Results were maintained even after the program completion and activity coordinators were no longer available.
Citation(s)	Taylor RW, McAuley KA, Barbezat W et al. (2008) APPLE project. Two-year follow-up of an obesity prevention initiative in children: the APPLE project. <i>Am J Clin Nutr</i> 2008;88:1371–1377
	Taylor RW, McAuley KA, Barbezat W, Strong A, Williams SM, Mann JI.(2007) APPLE project: 2-y findings of a community-based obesity prevention program in primary school-age children. <i>Am J Clin Nutr</i> 2007;86: 735–42.
	McAuley, Kirsten A., Taylor, Rachael W., Farmer, Victoria L., Hansen, Paul, Williams, Sheila M., Booker, Chris S., and Mann, Jim I. (2010) Economic Evaluation of a Community-based Obesity Prevention Program in Children: The APPLE Project. <i>Obesity</i> . Vol. 18 pp 131-136
Current Program Status	The initial phase of the APPLE project is complete but further information can be obtained thru the Edgar National Centre for Diabetes Research (http://www.otago.ac.nz/diabetes/research/apple.html). Most of the participating schools have since adopted not only new health policies and programs but the current New Zealand National Campaign: Mission-On (http://www.moh.govt.nz/healthyeatinghealthyaction). Information on current activities related to APPLE schools can be found at: http://healthylifestyles.tki.org.nz/ .