

# DRO

Deakin University's Research Repository

## This is the published version:

de Silva-Sanigorski, A., Robertson, N. and Nichols, M. 2009, *Romp & chomp : Healthy eating and active play for Geelong under 5s : Process report for objective 3*, The Romp & Chomp Project, [Geelong, Vic.].

## Available from Deakin Research Online:

<http://hdl.handle.net/10536/DRO/DU:30028943>

Reproduced with the kind permission of the copyright owner.

**Copyright :** 2009, Department of Human Services, City of Greater Geelong, Barwon Health, Deakin University



# *Romp & Chomp*

## Healthy Eating + Active Play for Geelong Under 5s

PROCESS REPORT FOR OBJECTIVE 3: To evaluate the process, impact and outcomes of the project. Implementation strategies, process evaluation, lessons learned and recommendations for future practice.



Copyright protects this publication.

This report was produced for The *Romp & Chomp* Project.

de Silva-Sanigorski A, Robertson N, Nichols M. (2009) PROCESS REPORT FOR OBJECTIVE 3:  
To evaluate the process, impact and outcomes of the project. Implementation strategies, process  
evaluation, lessons learned and recommendations for future practice.

# Acknowledgements

---

The work contained in this report represents an enormous effort from many people across a number of organisations. Their efforts and contributions are gratefully acknowledged.

**Funding:** Department of Human Services, City of Greater Geelong, Barwon Health, Deakin University

**Program implementation:** Several organisations and many staff have contributed to program implementation: Barwon Health, City of Greater Geelong, Geelong Kindergarten Association, Dental Health Services Victoria, Barwon Health-Dental, Leisure Networks, Victorian Government Department of Human Services, Deakin University

**Program evaluation:** The Deakin University research and evaluation team comprised: Andrea Sanigorski, Melanie Nichols, Lauren Carpenter, Floor de Groot, Narelle Robertson, Peter Kremer, Annie Simmons, Colin Bell, Boyd Swinburn and numerous research students.

The evaluation was also supported by the City of Greater Geelong and the Department of Education & Early Childhood Development (DE&ECD) and the Office for Children.

**Editorial Support:** Susan Parker, Emma Smitten

This project was broad in its reach and partnerships. Like any project there will be comings and goings, as staff left and others arrived. We acknowledge the contribution of many others who have contributed to this project in a myriad of ways over time. Thank you. It would not have been possible without each and every contribution.

# Table of Contents

Executive Summary.....	1
Governance Structure.....	3
Background to <i>Romp &amp; Chomp</i> .....	5
Introduction.....	8
Methods.....	9
Environmental Audit .....	10
Methodology .....	10
Baseline Results.....	11
Eating & Activity Survey.....	19
Methodology .....	19
Baseline Results.....	19
Lunchbox Survey (kindergarten) .....	22
Methodology .....	22
Results .....	23
Active Play.....	25
Methodology .....	25
Results .....	25
Structured Active Play in Long Day Care Settings .....	26
Conclusions and Recommendations.....	31
References.....	32
Appendices.....	33

## List of Figures

---

Figure 1: Map of Greater Geelong Region Map of Greater Geelong Region.....	6
Figure 2 <i>Romp &amp; Chomp</i> Logic Model.....	7
Figure 3: Summary of <i>Romp &amp; Chomp</i> Evaluation Plan. ....	8
Figure 4: The proportion of settings with a written nutrition policy .....	12
Figure 5: The percentage of meals provided to children by long day care and family day care .....	12
Figure 6: The proportion of settings with a written physical activity policy .....	14
Figure 7: Rating of long day care and kindergarten OUTDOOR facilities (out of 10) .....	16
Figure 8: Rating of long day care and kindergarten INDOOR facilities (out of 10).....	16
Figure 9: number of occasions children were taken for physical activity in the previous week.....	20
Figure 10: Breakdown by gender of activity type child engaged in during their free time .....	20
Figure 11: Total TV viewing time on previous day (min.) as reported by parents.....	21
Figure 12: Total TV viewing time on previous day (min.) broken into lower and upper SES.....	21
Figure 13: Percentage of children that brought at least one item from each group to kindergartens over time.....	23
Figure 14: Percentage of children that brought at least one item to kindergartens over time .....	24
Figure 15: Change over time of kindergarten activities.....	25

## List of Tables

---

Table 1 <i>Romp &amp; Chomp</i> Steering Committee members.....	3
Table 2 <i>Romp &amp; Chomp</i> Management Committee members .....	4
Table 3: Variables extracted for analysis .....	28
Table 4 Number of children and number of LGAs represented by year of consultation / measurement .....	29
Table 5: Number of 2 year olds and 3 ½ year olds available for each type of analysis (not cumulative) .....	29

## List of Appendices

---

Appendix 3.A: <i>Romp &amp; Chomp</i> Evaluation Plan .....	33
Appendix 3.B Eating & Activity Survey .....	41
Appendix 3.C: Lunchbox Survey.....	43
Appendix 3.F: Post Active Play Survey .....	44
Appendix 3.E Early Childhood Staff - Feedback.....	45
Appendix 3.F The effectiveness of a structured active play program LDC.....	46
Appendix 3.G The SAPP - Gross motor development of children from a lower SES.....	47



## Executive Summary

---

*Romp & Chomp* was a community-based and community-wide obesity prevention project conducted in the City of Greater Geelong and the Borough of Queenscliffe targeting approximately 12,000 children aged 0-5 years and their families. The intervention was conducted from 2004 to 2008 and activities were strongly focused on capacity building and involved predominately environmental and settings based strategies.

An important aspect of intervention projects is a comprehensive evaluation that is able to capture a wide range of outcomes. A complex community-based intervention such as *Romp & Chomp* requires data to be collected at multiple levels (particularly individual, settings and community), and in multiple ways (qualitative and quantitative). Evaluation of the process, impacts and outcomes of *Romp & Chomp* have been captured to assist with answering the questions of “*What worked, for whom and why?*” importantly capturing the context of the intervention. This report contains an outline of the evaluation and process and impact data. The main outcome of the effect of the intervention on children’s weight is not reported here as this analysis is still ongoing.

The *Romp & Chomp* intervention activities evolved from consultation with stakeholders and local experts within the community, including early childhood professionals and maternal and child health nurses. Interventions were created to address the individual needs of their services and support early childhood services move toward becoming supportive environments for promoting healthy nutrition and activity in young children. Baseline data were collected in 2005 and were also used to inform the intervention strategies and the development of the project action plan. The evaluation included: *Formative evaluation*, which captures the establishment of the project, engagement of key stakeholders and formation of steering committees and the governance structure; *Process evaluation*, which records the amount of time and costs associated with each objective, the actions taken to implement each strategy, and important learnings along the way; *Impact and outcome evaluation* which measures the effect of the project overall, and each of the objectives of the project action plan. As well as informing the development of the project’s strategies, the baseline data will provide useful local level data about the health of young children in Geelong and their nutrition and activity levels within early childhood services.

The *Romp & Chomp Project* evaluation was multi-level and comprised anthropometry, surveys of nutrition and physical activity behaviours, and environmental surveys in three types of early childhood services: long day care (LDC), family day care (FDC), and kindergartens.

In all, 47 kindergartens and 7 long day care centres and about 70 family day care providers throughout Geelong and the Bellarine Peninsula implemented the project. Although impact and outcome analysis continues, several positive changes have been demonstrated as a result of *Romp & Chomp*.

Preliminary analysis shows that outcomes include: the development and implementation of food, drink and active play policies; linkages with local community health settings, agencies, and professional services; connections with related projects (e.g. *Kids-Go for your life*, *Smiles 4 Miles*, *Start Right Eat Right*) enabling the achievement of awards; increased knowledge and skills around nutrition and physical activity within early childhood services; and access to an array of health promotion materials and resources.

Other substantial impacts include:

- Increases in healthy foods and drinks and reduction in unhealthy items brought to kindergartens;
- Increased (by over 30%) time spent in organised active play during kindergarten session; and,
- Policy implementation in early childhood settings to support healthy eating and active play for young children.

Further evaluation related to individual behaviour change and anthropometry is in progress.

## Governance Structure

---

In 2003 the Department of Human Services provided funding to address health concerns related to obesity in the Barwon-South West region. The Sentinel Site for Obesity Prevention at Deakin University was to support the development of, coordinate and evaluate three regional demonstration projects: *Be Active, Eat Well* (4-12 year olds), *It's Your Move!* (12-18 year olds) and *Romp & Chomp* (0-5 year olds).

*Romp & Chomp* had a target group of over 12,000 children aged 0-5 years in the city of Geelong and surrounding areas, including the Bellarine Peninsula and Borough of Queenscliffe. It was a partnership project targeting early childhood settings throughout this region, working together with the *Smiles 4 Miles* and 'Kids- Go for your life' projects to improve health and weight outcomes.

**The Steering committee** contained members of partner organisations at, or equal to, CEO level, in order to ensure management support for the project. This committee met infrequently and comprised the following:

Person	Role	Agency	Tenure
Anna Fletcher	General Manager, Community & Mental Health	Barwon Health	2004 - 2007
Nola Ganly	Manager, Community Partnerships	Barwon South-Western Regional Office, DHS	2004 - 2006
Annie O'Loughlin	Manager, Early Years	Barwon South-Western Regional Office, Department of Human Services (DHS)	2006 - 2008
Donna Mant-Smith	Manager, Family Services	City of Greater Geelong (CoGG)	To June 2005
Boyd Swinburn	Professor, Population Health	Deakin University, WHO Collaborating Centre for Obesity Prevention (WHO CC)	2004 - 2008
Robert Were	Manager, Family Services	City of Greater Geelong (CoGG)	2005 - 2007

**Table 1 *Romp & Chomp* Steering Committee members**

**The Management committee** contained members of partner organisations who had direct management responsibilities of early years services/agencies. This committee met monthly and comprised:

Person	Role	Agency	Tenure
Colin Bell	Research Fellow & Project Manager	Deakin University, WHO CC	2004 - 2006
Mark Brennan	Dietitian & R&C Project worker	Barwon Health <i>EFT: 0.4</i>	2006 - 2007
Brooke Connolly	Healthy Communities Team Leader	Leisure Networks	2005 - 2008
Maree Crellin	Co-ordinator Maternal & Child Health Services	CoGG	2004 - 2008
Lisa Demajo	Co-ordinator City Learning & Care Services	CoGG	2004 - 2008
Kathleen Doole	Community Health Nurse & R&C Project Co-Coordinator	Barwon Health <i>EFT: 0.5</i>	2004 - 2006
Debbie Elea	Co-ordinator Family Day Care Services	CoGG	2004 - 2008
Melanie Nichols	Research Assistant & PhD Student	Deakin University, WHO CC	2005 - 2007
Janet Park	Executive Officer	Geelong Kindergarten Association (GKA)	2005 - 2008
Andrea Sanigorski	Research Fellow & Project Manager	Deakin University, WHO CC	2004 - 2008
Janet Torode	Dietitian & R&C Project Co-Coordinator	DHS <i>EFT: 0.5</i>	2004 - 2006
Louise VanHerwerden	Dietitian & R&C Project Coordinator	Barwon Health <i>EFT: 0.6</i>	2006 - 2007
Helen Walsh	Regional Health Promotion Officer	DHS	2004 - 2007

**Table 2 *Romp & Chomp* Management Committee members**

The Management committee also included representatives from other health promoting projects active within the region:

Person	Role	Agency
Vanessa Philips	Health Promotion Officer	Dental Health Services Victoria
Sharon Sharp	Coordinator <i>Smiles4Miles (S4M)</i>	Barwon Health-Dental
Amanda Stirrat	Coordinator <i>Kids-‘Go For Your Life’ (KGFYL)</i>	CoGG

As all coordinators had left the project prior to completion, the final activities and write up of the process report was completed by:

Person	Role	Agency
Floor De Groot	International intern & Research Assistant	Free University of Amsterdam & Deakin University WHO CC
Susan Parker	Health Educator	Barwon Health
Narelle Robertson	Research Assistant	Deakin University, WHO CC
Andrea Sanigorski	Research Fellow & Project Manager	Deakin University, WHO CC

## Background to *Romp & Chomp*

---

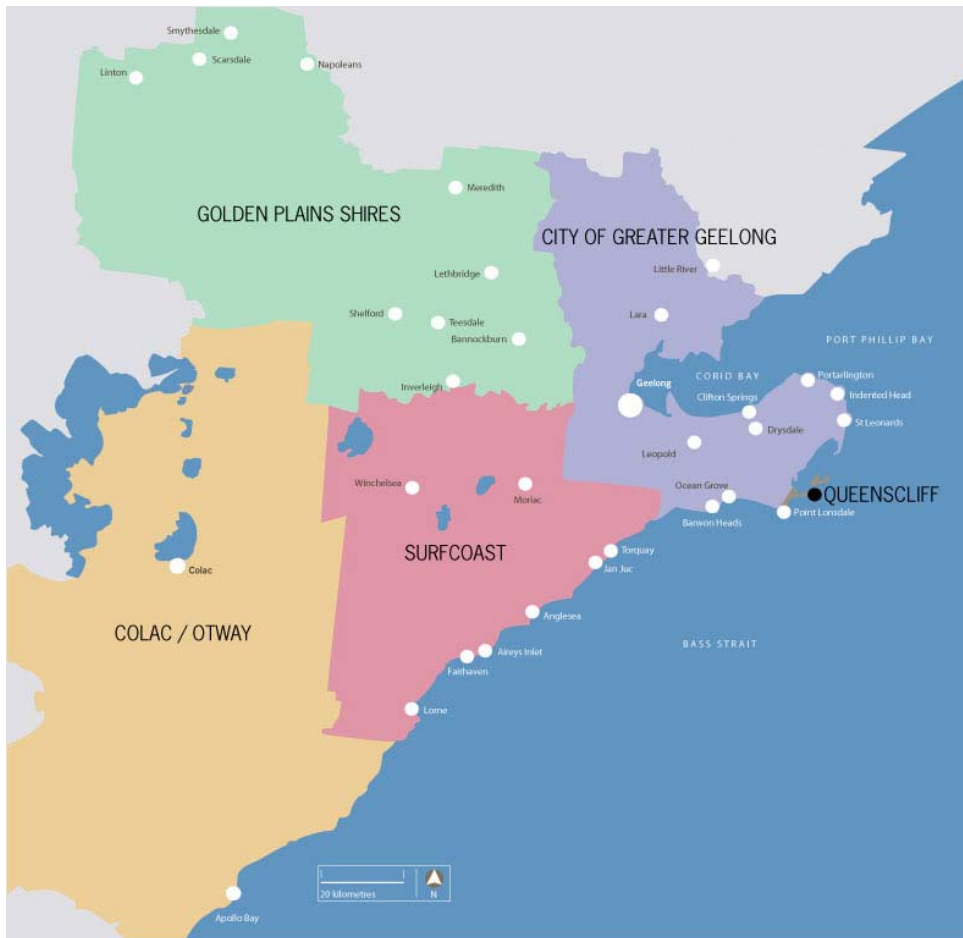
The Deakin University (DU) Sentinel Site for Obesity Prevention was established in the Barwon-South Western Region with funding from the Department of Human Services (DHS) and the Department of Health and Ageing. Subsequently, obesity prevention resources and expertise were focussed within the BSW region to trial and evaluate innovative demonstration projects for obesity prevention. This site was within the WHO Collaborating Centre for Obesity Prevention.

In 2003, an interim steering committee was formed from a collaboration between DHS, DU, Barwon Health, City of Greater Geelong (COGG), Geelong Kindergarten Association (GKA) and Leisure Networks and it was determined that one demonstration project would support healthy eating and active play in children under 5 years within the Geelong region (see figure 1).

The *Romp & Chomp* project was subsequently developed as a community-based and community-wide obesity prevention demonstration project targeting preschool children in the City of Greater Geelong and the Borough of Queenscliffe. The project was conducted from 2004-2008 and targeted the 12,000 children aged from 0 to 5 years of age and their families.

The broad aim of the *Romp & Chomp* project was to increase the capacity of the Geelong community to promote healthy eating and active play and to achieve healthy weight in children less than 5 years of age. This was to be achieved through a series of 8 objectives and targeting community and early childhood settings with four key messages; 1) daily active play 2) daily water and less sweet drinks 3) daily fruit and vegetables, and 4) less screen time.

Throughout the project, *Romp & Chomp* was supported by a number of key community organisations. A management committee of stakeholders (see below, tables 2 & 3), oversaw the implementation of the action plan and assisted the project coordinators (employed through Barwon Health and DHS) to fulfil their duties.



**Figure 1: Map of Greater Geelong Region Map of Greater Geelong Region**

### Logic Model

The Romp & Chomp project was developed within the socio-ecological model of health and the logic model (figure 2) is therefore multi-level and multi-setting. From this basis, the evaluation was also designed to measure all aspects of the project and a complex project such as Romp & Chomp requires a multi-level design. The evaluation is repeat cross-sectional with a control group and draws on existing population data as well as data collected specifically for this program evaluation.



1. Capacity is leadership, skills, knowledge, structures, resources , partnerships

2. Environments (built, social, economic, policy) include community-based organisations, early childhood services, homes, neighbourhoods, health services

**Figure 2 Romp & Chomp Logic Model**

## Introduction

---

The *Romp & Chomp* action plan included an evaluation objective (see report 1 for a complete example of the *Romp & Chomp* action plan) and while *Romp & Chomp* captures the process, impact and outcome evaluation (see fig.3) this report deals primarily with the impact and outcome evaluation to determine what worked for who and why? This report details the design, instruments and methods that were used to evaluate the multiple objectives of the *Romp & Chomp*.

Measure	Instrument	When
<b>Process:</b>		
<ul style="list-style-type: none"> <li>Formative processes recorded by project staff</li> </ul>	Project action plan, documents, minutes, interviews	2005-2008
<ul style="list-style-type: none"> <li>Evaluation of training, resource use, kindergarten implementation etc</li> </ul>	Feedback surveys, pilot testing, minutes of meetings	2005-2008
<ul style="list-style-type: none"> <li>Evaluation Plan</li> </ul>		
<b>Impact:</b>		
<ul style="list-style-type: none"> <li>Project Progress reports, social marketing plan, communication plan etc</li> </ul>	Project action plan, documents, minutes, key informant interviews, community survey of awareness of key messages	2005-2008
<ul style="list-style-type: none"> <li>EC Settings surveys</li> </ul>	EC Settings surveys	2005, 07-08
<ul style="list-style-type: none"> <li>Eating and Activity Survey</li> </ul>	Eating and Activity Survey	2005/6, 07/08
<ul style="list-style-type: none"> <li>Community Capacity Index</li> </ul>	Community Capacity Index	2008
<ul style="list-style-type: none"> <li>Maternal Child Health growth data</li> </ul>	Maternal Child Health data	1998-2008
<b>Outcome:</b>		
<ul style="list-style-type: none"> <li>Process Evaluation</li> </ul>	Primary measure: Implementation of the action plan	2005-2008
<ul style="list-style-type: none"> <li>Impact Evaluation</li> </ul>	Primary measures: Behaviour change, improvements in EC settings, increased capacity	2005/6, 2007/8
<ul style="list-style-type: none"> <li>Outcome Evaluation</li> </ul>	Primary measures: weight, BMI, z-BMI, weight status (overweight/obesity) compared to comparison group	2005-2008

**Figure 3: Summary of *Romp & Chomp* Evaluation Plan.**



## Methods

---

*Romp & Chomp* used a repeat cross-sectional quasi-experimental design with measurements in the intervention and comparison populations at baseline and after three years of intervention. The intervention site chosen was the City of Greater Geelong (CoGG) and the comparison group comprised a matched samples of other local government areas (LGAs, n=40) with available electronic data on height and weight from the 2 and 3.5 year Maternal Child Health (MCH) 'Key Age and Stage' checks (see objective 8). The project outcome will be assessed by comparing the changes in body mass index and prevalence of overweight and obesity in Geelong against the changes in the other local government areas. These data are not presented here. Other cross-sectional surveys of anthropometry, behavioural patterns and environmental audits in the early childhood settings were done at baseline in the intervention area and follow up after 3 years in both intervention and comparison LGAs. What follows are summaries of the baseline measurements.

### Instruments

- Environmental audits: Audit surveys of early childhood settings (kindergarten, LDC, FDC)
- Behaviours: Parent-reported eating and activity behaviours of the child using the Eating and Physical Activity Questionnaire
- Lunchbox Survey [Kindergarten only] Paper based surveys (final survey completed electronically using the Survey Monkey Program) completed by kindergarten teachers.
- Anthropometry: Height and weight from routinely collected MCH data for 2 and 3.5 year 'Key Age and Stage' visits (for those completing the EAS questionnaire)
- Capacity building: Interviews, community capacity index, document analysis (see report 1 for further detail)

# Environmental Audit

---

## Background

As a large component of the intervention activities were directed at the early childhood settings, evaluation of the changes at the settings level (policies, practices, attitudes, facilities etc) are important to capture. The settings, surveyed at baseline and follow-up were family day care, long day care and kindergartens.

## Methodology

### Purpose

The three environmental audit tools for *Romp & Chomp* contain measures of general characteristics of the settings (i.e., number of children cared for) as well as factors in the physical, policy, socio-cultural and economic environments of the setting that may enhance or inhibit efforts to promote healthy eating and active play for children who attend the setting. Several questions also enquire about staff training, resource requirements, confidence and perceived effectiveness in influencing parents.

### Source and validation

The survey used in *Romp & Chomp* was adapted from previously used environmental surveys and knowledge of the sector. The instruments were based on the ANGELO (Analysis Grid for Environments Linked to Obesity) framework of obesogenic environments described by Swinburn & Egger [1] incorporating the physical, economic, policy and socio-cultural aspects of environment. The tools were refined during consultation and piloting with key stakeholders within the community and settings. Adaptations of the environmental audits were made after piloting to make them relevant and appropriate for early childhood settings. Many items are common to all three audits and can be compared across settings, however there are also a significant number of questions which are specific to the setting, especially those relating to food provision (as this is different between settings) and questions which were revised after pilot testing for acceptability and appropriateness.

### Administration

The early childhood settings audits were posted directly to kindergartens and long day care centres in the Geelong region, and were sent to family day care providers on behalf of researchers by staff at the City of Greater Geelong. Reply paid envelopes were provided for staff to return the survey

directly to Deakin University. Approximately 1 week after the deadline for survey return, a reminder letter was sent to non-responding kindergartens and day care centres by researchers and to all family day care providers. A further 2 weeks later a repeat survey was sent to non-responding kindergartens and long day care centres, but no further follow up was possible for family day care.

For the **baseline Environmental Settings Audits**, the following response rates were obtained:

- Long Day Care (LDC): 73.1% (19/26)
- Family Day Care (FDC): 66.8% (44/66)
- Kindergartens: 74.5% (38/51)

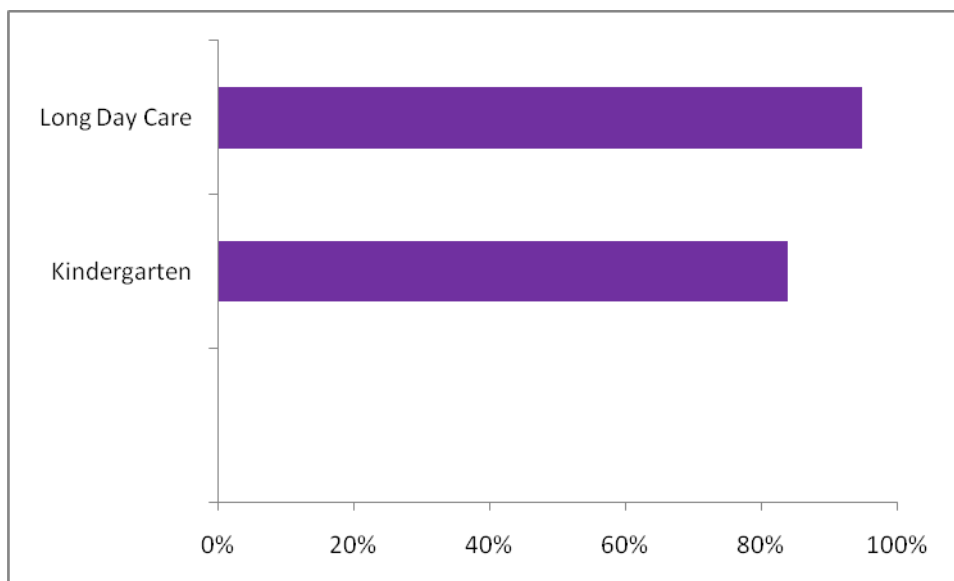
## **Notes**

The survey has been further developed for state-based distribution and was processed by Deakin Computer Assisted Research Facility so that surveys could be electronically scanned to reduce the burden of data entry. The state-wide distribution at follow-up was done by the Office for Children for kindergartens and long day care centres in 33 Local Government Authorities. Family day care surveys were distributed in 20 Local Government Authorities by the councils.

## **Baseline Results**

### **Nutrition Policy**

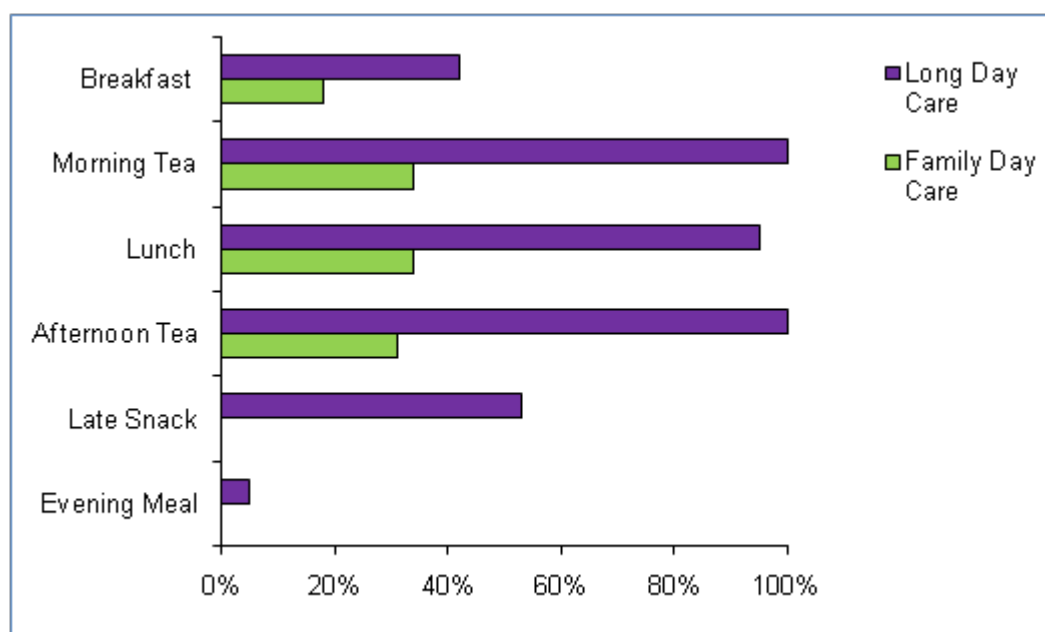
As can be seen in fig.4, in 2005 95% of LDC and 84% of kindergartens had a written nutrition policy. These policies included restricting sweet drinks while promoting water and milk consumption in addition to encouraging fruit and vegetable consumption. Policies also encouraged teaching healthy nutrition to children and regularly providing parents with healthy nutrition information. Within FDC 0% had an individual written nutrition policy (as they are coordinated by local council, with policies set in a centralised way); however 86% of FDC provided guidelines and suggestions for healthy food for parents that supplied food for their own children (60%) and 33% had strict restrictions on the types of food and drinks allowed in the service (such as plain milk, water, fruit and vegetable).



**Figure 4: The proportion of settings with a written nutrition policy**

## Food

As can be seen below, the LDC service provided the majority of the food for children in their care throughout the day, whereas in FDC, food was generally brought from home (see fig.4).



**Figure 5: The percentage of meals provided to children by long day care and family day care**

In LDC, the food and drinks provided typically included fruit, vegetables, milk and water. In addition, 17% of centres provided sweet biscuits or cake for afternoon tea. The menu was largely decided upon by the centre director or the cook (94%) although contributions to the menu were also made by parents (83%), carers (56%) and dieticians (44%). The vast majority (94%) of children in LDC were never offered food such as lollies and dessert as a reward, treat or comfort

however less than half of LDC offered healthy food at celebrations and special occasions (32% 'rarely/never', 47% 'sometimes').

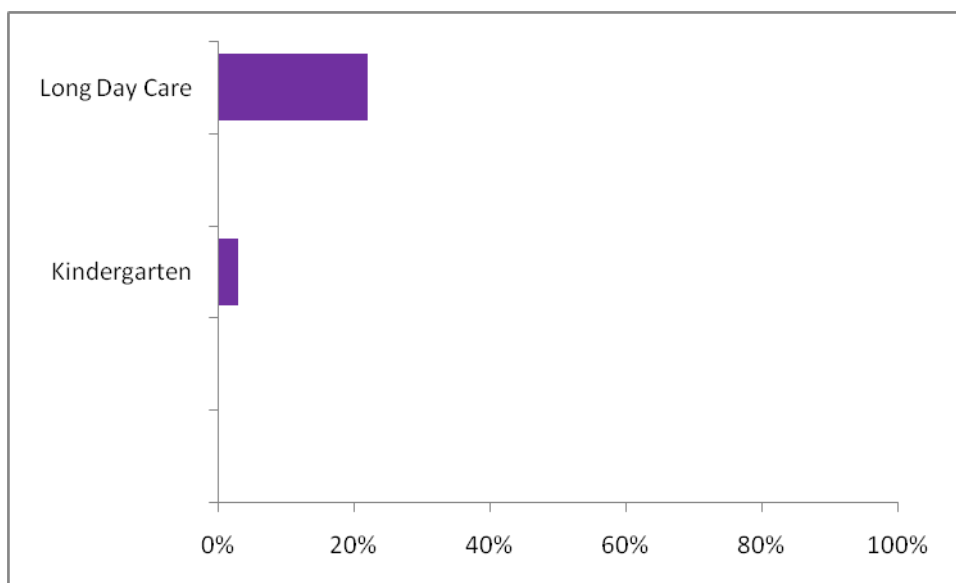
In FDC, parents usually provided all of the food for their children. However, some carers (52%) chose to provide additional food (see fig. 5) and 33% offered food such as lollies and dessert as a reward, treat or comfort for children (on average 2.3 times per month).

In kindergartens all food was provided by parents and staff in most kindergartens (95%) never offered food such as lollies and dessert as a reward, treat or comfort. Food offered at celebrations and special occasions was reported to be rarely/never (43%) or only sometimes (32%) healthy. With regards to fundraising, 53% of LDC and 55% of kindergartens had chocolate or confectionary fundraising activities.

With regards to intervention activities, the needs of the three services varied greatly. While the majority of LDC centres provided food for the children the majority of children in FDC and all in kindergarten brought their food from home. These differences had implications for the types of written policies needed, the challenges faced by each service in promoting the policies to parents and the content of the policies.

### **Physical Activity Policy**

In 2005, 4 out of 18 LDC (22%) and 1 out of 38 (3%) of kindergartens had a written physical activity policy (see fig. 6). Although there were only few services with policies, in LDC the physical activity policies largely focused on promoting physical activity to develop fundamental motor skills and regularly rotating or varying play equipment. No family day care providers had a written physical activity policy.



**Figure 6: The proportion of settings with a written physical activity policy**

From the survey results it was determined that there was a need for written active play policies to be implemented in all services. See report 7 for the active play process evaluation.

## **Time spent in Active Play**

### Long day care

- An average of 247 minutes/day allocated for organised active play (in and outside)
- An average of 160 minutes/day allocated for quiet, sitting activities

Almost a quarter of LDC (22%) had a set minimum time for organised active play such as active games, dance and sports-like activities. The average minimum time set by LDC centres for organised active play was 48 minutes per day. In addition, 28% of LDC had a set minimum time that children spent outside each day, which on average was set at 97 minutes per day.

### Family day care

- An average of 116 minutes/day allocated for free outside play
- An average of 173 minutes/day allocated for free inside play
- An average of 87 minutes/day allocated for organised active play (in or outside)

39% of FDC had a set minimum time for organised active play. The average minimum time set by FDC provider for organised active play was 55 minutes per day. As well, 47% of FDC had a set minimum time for children to spend outdoors, which on average was set at 83 minutes per day.

More than half of LDC (61%) and FDC (69%) organised and ran structured activities to develop fundamental skills at least once a day. 42% of LDC and 39% of FDC rotated or varied play equipment at least once or twice a day. While only 11% of LDC (2 centres) allowed television/video viewing once per day, 74% of FDC allowed television/video viewing at least once a day. With regards to computer use, 61% of LDC and 77% of FDC did not allow use.

#### Kindergarten (4 year old kindergarten with an average session time of 231 minutes)

- An average of 79 minutes/session allocated for free outside play
- An average of 83 minutes/session allocated for free inside play
- An average of 39 minutes/session allocated for organised active play (in or outside)

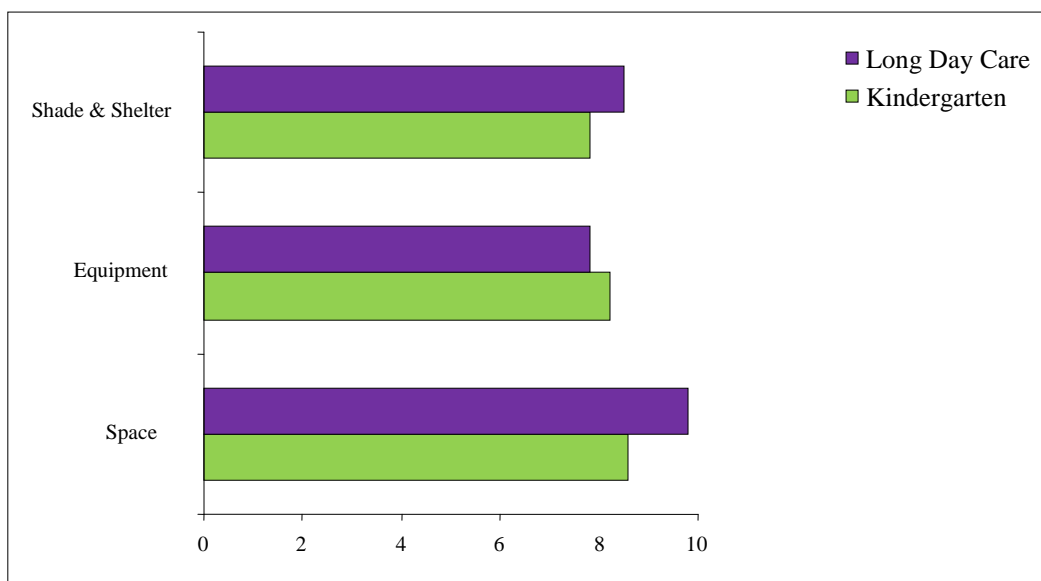
In kindergartens, children had an average of 33 minutes in organised activities, and one third (34%) of kindergartens had a set minimum time for organised activities each day. Despite this, 42% had a set minimum time children spent playing outside each day and on average the minimum was set at 70 minutes/session playing outside. Staff in kindergartens often conducted organised structured activities for the development of fundamental movement skills, with 79% doing so at least once per session. However, only 39% of kindergartens rotated or varied play equipment on a daily basis. Nearly all kindergartens did not allow children to view television/videos (95%) or use computers or electronic games (95%).

These baseline results give a broad picture about what is going on within services in regards to children's activities while in care. As with nutrition, processes of active play differ from service to service. The capacity for services to engage children in active play varied widely due to such factors as age range of the children in care, capacity of staff and the types of environment provided (space, equipment etc.). From these data, strategies were developed with staff within these settings to address the needs of all three services (see report 7).

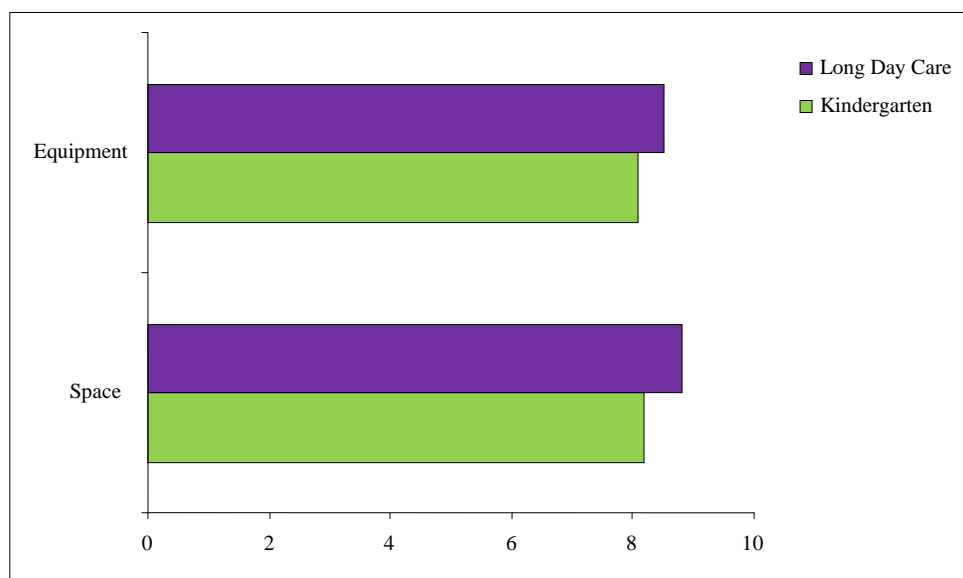
### **Outdoor Environment**

#### Long day care and kindergarten

- On average staff rated the outdoor and indoor areas at their settings very highly for space, equipment and shade/shelter (outdoor only).



**Figure 7: Rating of long day care and kindergarten OUTDOOR facilities (out of 10)**



**Figure 8: Rating of long day care and kindergarten INDOOR facilities (out of 10)**

In general, indoor and outdoor environments were rated highly by all services (see fig. 7 & 8). The type of environment is important to encouraging active play among children but it also one of the more difficult things to change. The active play interventions in *Romp & Chomp* looked at adapting activities to suit the environment or setting up the environment in a way to encourage activity, rather than changing the environment itself.



## **Staff, Training & Communication**

### Long day care

- 95% of LDC nutrition and physical activity policies were decided by the centre director, staff members and parents
- 16 % had all carers and 63% had some carers with specific training in food and nutrition for children at long day care
- 11% had all carers and 74% had some carers with specific training in physical activity and movement skills for children at long day care
- Informal conversation was the most common method used to convey information relating to nutrition (used “often” in 90% of centres) and physical activity (83% of centres) to parents

### Family day care

- 91% of FDC providers had specific training in food and nutrition for children
- 62% of FDC providers had specific training in physical activity and movement skills for children
- Informal conversation was the most common method used to convey information relating to nutrition (used “often” by 44% of care providers) and physical activity (68% of care providers)

### Kindergarten

- 84% of kindergarten nutrition and physical activity policies were decided by the centre director and teachers
- 37% had all staff and 26% had some staff with specific training in food and nutrition for children at kindergarten
- 61% had all staff and 29% had some staff with specific training in physical activity and movement for children at kindergarten
- Kindergarten staff communicated with parents about nutrition in a variety of ways, with the most common being newsletters (used “often” in 50% of kindergartens) and bulletin boards (used “often” in 46% of kindergartens)
- Informal conversation and newsletters were the most common methods of communicating with parents about physical activity (used “often” in 33% and 32% of kindergartens respectively)

In addition, other findings are summarised below:

- Many FDC providers reported difficulty attending specific training or professional development, which was related to their inability to have another carer fill their position.
- FDC providers rated the information and resources available to them in relation to children's nutrition (8/10) and physical activity (7.5/10) highly.
- Many LDC centres reported availability and support for staff to attend specific training and professional development sessions and most LDC respondents also rated highly the information and resources available for staff in relation to children's nutrition (8.1/10) and physical activity (7.8/10).
- Kindergartens often had the most staff with specific training and professional development in nutrition and physical activity for children, however they rated the availability of resources and information relating to nutrition (6.7/10) and physical activity (6.3/10) somewhat lower than the other EC services.

Strategies to provide training during the course of the *Romp & Chomp* project took these needs into account, tailoring the training to suit the individual services (see reports 4 and 5 for nutrition related training and 7 for active play related training implementation).

# Eating & Activity Survey

---

## Methodology

Behavioural data related to children's nutrition and activity patterns was collected using a short survey of parents attending the Maternal and Child Health (MCH) nurse services for their child's 2 or 3.5 year old check up.

### Sample

All parents or carers of children who attended an MCH centre for a 2 year or 3.5 year 'Key Age and Stage' consultation in Geelong between July 2005 and June 2006 were invited to participate. Completed surveys were returned for 950 children aged 2-4 years from the Greater Geelong area (response rate = 32.4%). The sample was of a somewhat higher socio-economic position than the general population.

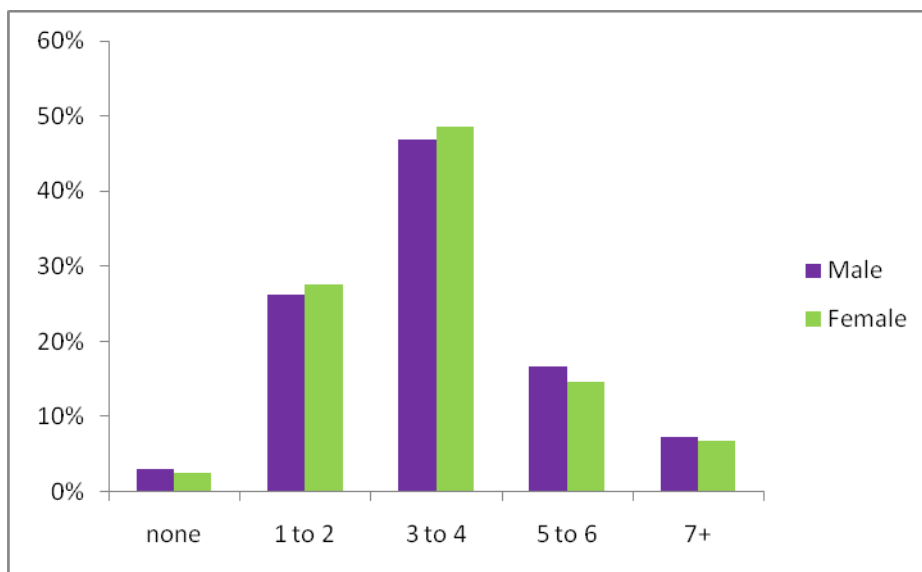
### Survey

A two page Eating and Activity Survey (EAS) (see appendix 3.B) was used to examine children's eating and activity behaviours likely to be risk or protective factors for obesity development. The survey consisted of questions about demographic characteristics, activity levels and dietary information.

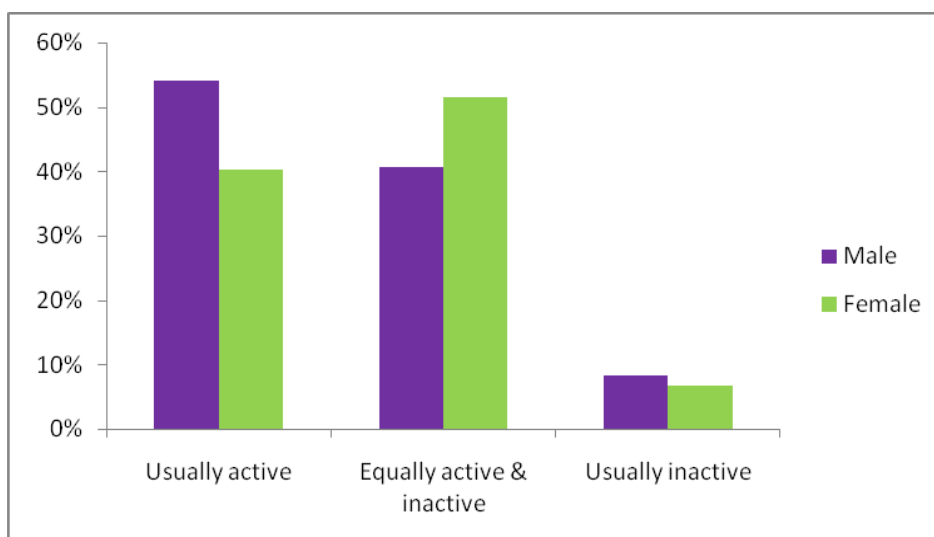
## Baseline Results

### Active play

Figure 9 shows the number of times parents/carers took their child to be active each week (see fig 8), while figure 10 shows the parent-reported proportion of the types of activities children usually preferred to engage in during their free time (see fig. 10).



**Figure 9: number of occasions children were taken for physical activity in the previous week**

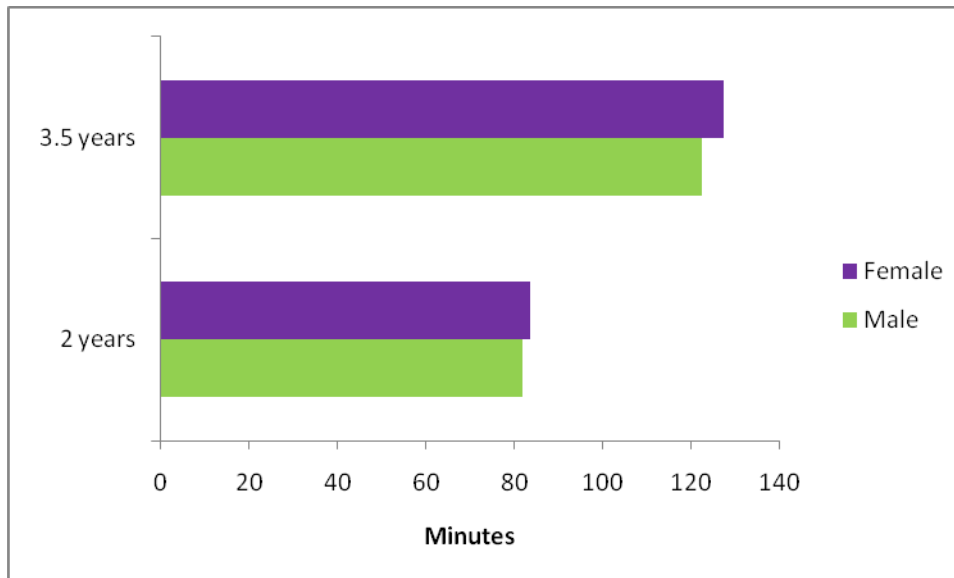


**Figure 10: Breakdown by gender of activity type child engaged in during their free time**

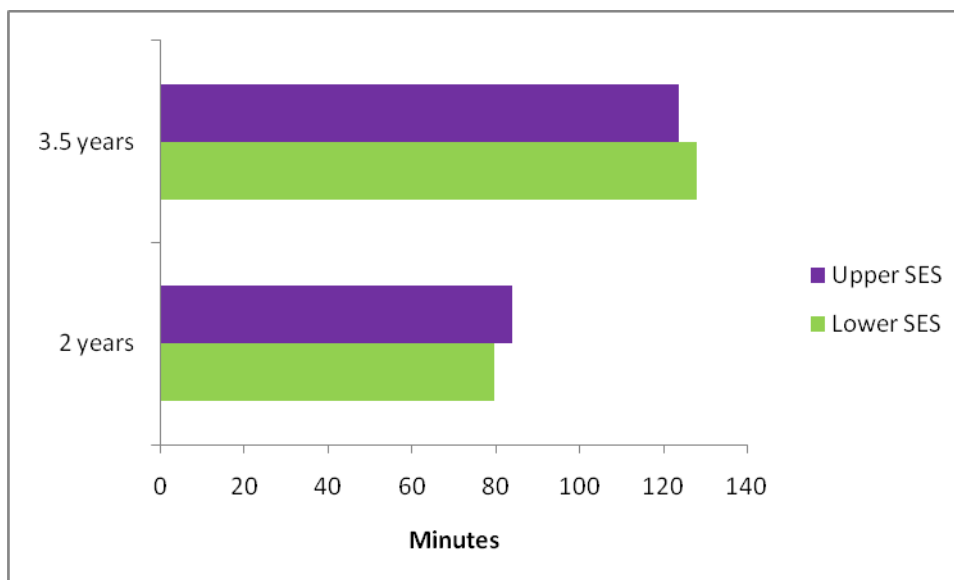
Only a very small proportion of children were not ever taken to be physically active, whereas a large proportion was taken to be active between 1 and 4 times per week. About half of the young children were reported to usually choose active pastimes during their free time, and a larger proportion of boys were active during their free time when compared with girls. A larger proportion of girls spent time in both active and inactive pastimes equally as often.

### Early childhood TV viewing time

Parents of 2 and 3.5 year olds reported on the amount of TV their child viewed on the previous day. This data is presented in figure 11 and figure 12 where is also shown against Socio-Economic Status (SES).



**Figure 11: Total TV viewing time on previous day (min.) as reported by parents**



**Figure 12: Total TV viewing time on previous day (min.) broken into lower and upper SES**

In this sample, 48% of pre-school children watched 2 or more hours of television, which is above the American Academy of Paediatrics recommendations (**American Academy of Pediatrics 2001**). Objective 6, 'to significantly increase home/ family-based active play and decrease television-viewing time' was the only objective to target behaviour in the home and is consequently

challenging to address and perhaps beyond the capacity of the *Romp & Chomp* project. Further evidence about behaviours and awareness of the television viewing guidelines was collected through focus groups (see report 6).

## **Lunchbox Survey (kindergarten)**

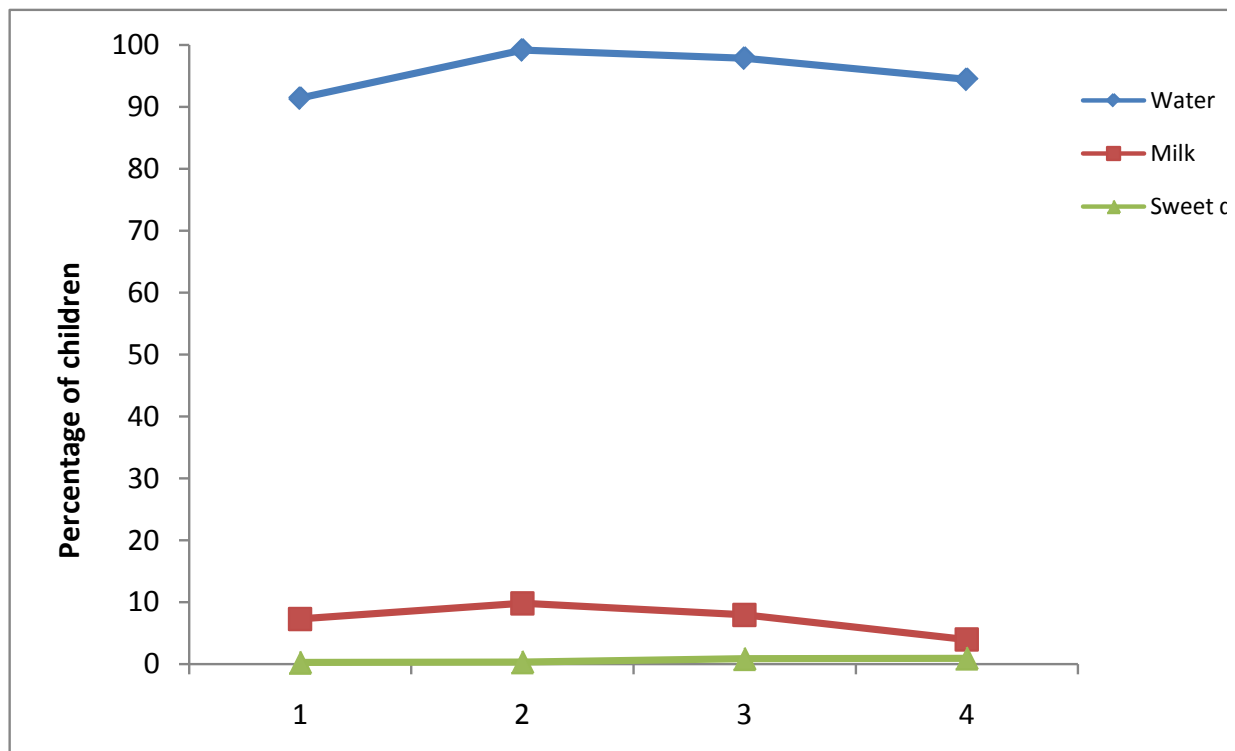
---

### **Methodology**

All of the kindergartens who actively participated in the *Romp & Chomp* intervention activities completed a series of Lunchbox Surveys (conducted pre and post intervention; see appendices 3.C & 3.D) including an active play survey component (n=43). All surveys were completed by the kindergarten teacher and were paper based, other than the last one which was completed electronically using the Survey Monkey program. Lunchbox surveys in kindergarten settings asked teaching staff to determine the proportion of children bringing a range of food and beverage items on a given day through observation during a snack and/or lunch session. These were conducted four times: November 2006 (Time 1, n=37), March 2007 (Time 2, n=18), November 2007 (Time 3, n=38) and March 2008 (Time 4, n=38). This component of the evaluation was originally part of the Smiles4Miles program evaluation; however the methodology was refined and incorporated into the *Romp & Chomp* evaluation. There are approximately 25 children attending for each kindergarten session.

## Results

### Drinks

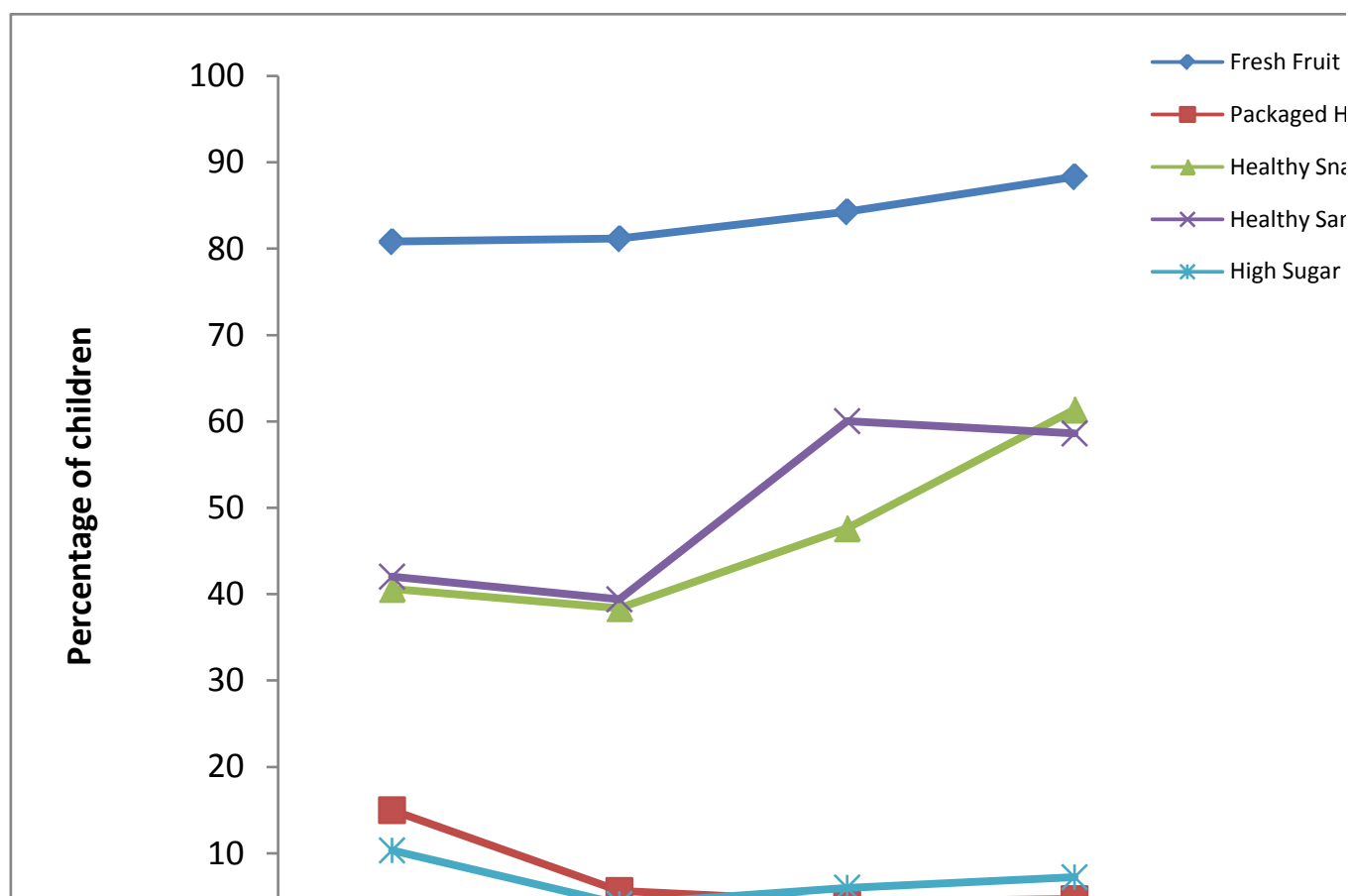


**Figure 13: Percentage of children that brought at least one item from each group to kindergartens over time**

These results show that virtually all children in kindergartens within the CoGG region took water to drink. There is a very low level of sweet drinks in these settings. The percentage of kindergartens that are 'water only' is encouraging and consequently the percentage of sweet drinks in kindergartens was very low and stayed low (less than 1%, see fig. 13). Plain milk consumption peaked at time 2 with 9.8% having plain milk at kindergarten; at time 4 this had dropped to 4%.

As detailed in process report 4, many kindergartens were already moving toward or had a zero tolerance for sweet drinks in their setting and *Romp & Chomp* provided support and resources for kindergarten staff to embed water only policies in their settings, ensuring sustainability and consistency from year to year.

## Food



**Figure 14: Percentage of children that brought at least one item to kindergartens over time**

Figure 14 shows that the proportion of children who took fresh fruit and vegetables to kindergarten increased by 7.5% during the *Romp & Chomp* intervention. Concurrently the proportion of children who took packaged foods high in fat, salt or sugar decreased by an average of 10% from time 1 to time 4 while healthy snacks increased by 20% over the same period.

The number of children who took sandwiches with high sugar fillings was at its lowest point at time 2, dropping from 10% to 4%. From time 3 to time 4, there was a slight increase in children who took sandwiches with high sugar fillings, 6% and 7% respectively. Early childhood staff were given feedback forms (see appendix 3.E) along with the other surveys and according to feedback, as the year draws to a close, they sometimes found inappropriate foods creeping back into children's lunchboxes. Consequently an important learning is the need to reinforce the healthy food and drink messages regularly throughout the year. The consumption of sandwiches with healthy fillings increased from 42% at time 1 to 59% at time 4.



## Active Play

---

### Methodology

The active play survey was added to the *Smiles4 Miles* kindergarten survey and subsequently was collected only at 3 time points. Baseline or time 1 was collected in November 2006 (n=33); time 2 in November 2007 (n=38) and the final survey was in March 2008 (n=40). This short survey captured information about activities during the kindergarten session and the adoption of policies relating to active play.

### Results

Figure 16 shows that from baseline, organised active play in kindergartens increased by over 30%, an increase that was sustained into the next kinder year (time 3). During this same time, the average session length did not change, free play increased, and indoor active play decreased marginally.

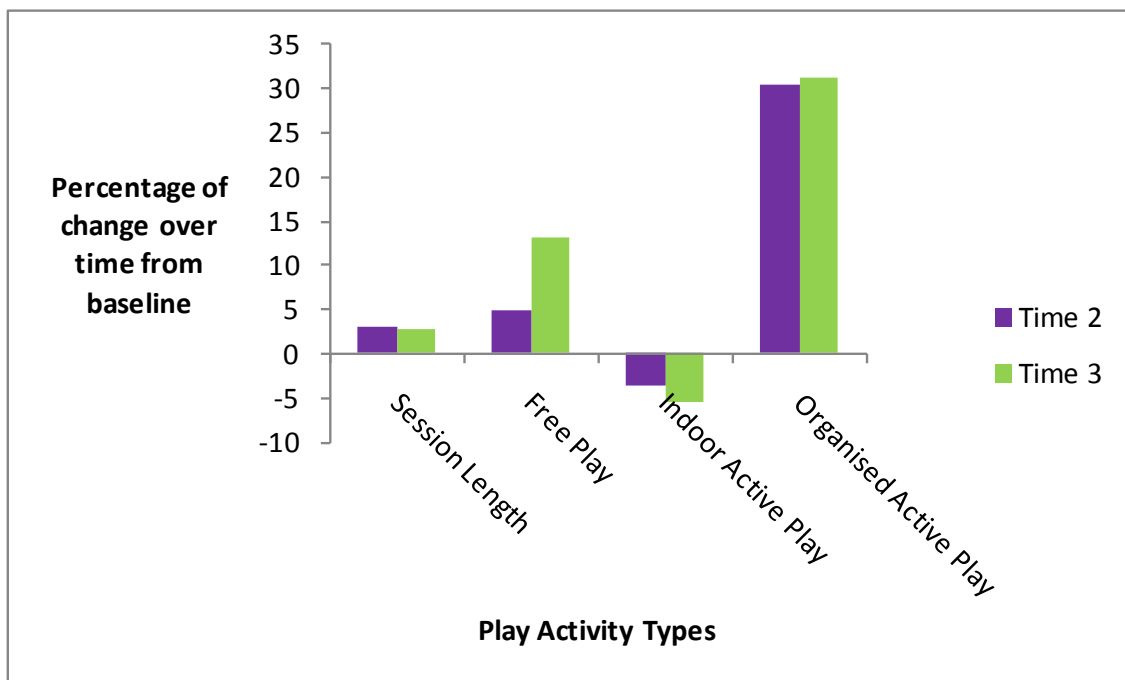


Figure 15: Change over time of kindergarten activities

## Structured Active Play in Long Day Care Settings

---

As a part of the *Romp & Chomp* objective 7: to increase structured active play in kindergarten and childcare settings (see report 7) a number of honours projects (conducted under supervision of Andrea Sanigorski and Karen Stagnitti) were conducted. One explored the effectiveness of the Structured Active Play Program (SAPP) in Long Day Care Settings, (for a summary on the effectiveness of the SAPP in LDC see appendix 3.G. The project was titled 'Physical activity participation of three, four- and five-year old children in a long day care setting: The effectiveness of a structured active play program'). The other project evaluated the SAPP's use on the gross motor development of children from a lower socio-economic status. See appendix 3.H for a summary of the evaluation on the SAPP use on the gross motor development of children from a low SES.

## Outcome Evaluation

---

### **Intervention group: child anthropometric data**

Child anthropometry and demographics (weight, height, age, gender and SES) were obtained from the universal MCH child health data in 2004 and 2007 for Geelong. The details of the development of this database are provided in objective 8.

### **Comparison group: child anthropometric data**

The comparison group is drawn from across Victoria and follows on from the work undertaken in CoGG for objective 8. The use of the child health data for the comparison group was a collaborative effort with the Statewide Outcomes for Children branch in the Office for Children, DE&ECD. The process followed is outlined below:

It was initially determined that a variety of data entry programs and databases are used in Victorian MCH services, and systems vary considerably between LGAs, including a small number of LGAs who do not use electronic data management systems for their Maternal & Child Health growth data. The MaCHS system, as used in Geelong is the most common system, used by about three-quarters of LGAs, with support provided by an external company (Data Systems International, DSI), who support M&CH service managers in each LGA directly.

An agreement was reached between Deakin University and Statewide Outcomes for Children in which the state government funded the development of the database query by DSI and Deakin University provided researcher capacity for the data cleaning, analysis and reporting. In close consultation with researchers at Deakin, DSI developed the MaCHS database query program to extract all of the data into a tab-delimited text file. DSI then distributed this program to managers of MCH in each LGA using MaCHS on a CD, with instructions and a covering letter from the Office for Children. Coordinators of maternal and child health services in each Local Government Area (LGA) using MaCHS (n=60 from a total of 79 LGAs) were requested to run the database query which extracted the required data (described below in table 10) without identifying details. Data were returned by email to the Office for Children in the state government, who then provided the data to researchers at Deakin University. Follow-up by phone calls and emails to managers of non-responding LGAs was conducted by Deakin University research assistants.

Data were extracted for all children who had attended an MCH centre in one of the responding LGAs using the MaCHS database for either a 2 year old or a 3 ½ year old 'key age and stage' consultation during the period from the start of electronic records in that municipality until the 31<sup>st</sup> December 2007. A number of extra variables were added to the query in addition to those

extracted in the City of Greater Geelong. Several variables were added to identify the LGA and centre from which data were obtained, as well as indigenous status and feeding method at 6 months to enable further analysis of the data in relation to these factors. Data were also extracted in one line per child, to enable linking of the 2 year old and 3.5 year old measurements for each child and therefore analysis of changes in weight status between the two age points. When a family moves to a new area, their file is closed by the LGA or centre they are leaving and transferred to the new centre (whether in the same LGA or a new one). To ensure that no child was represented twice in the data, only data from children with whose files were still 'active' were extracted.

**Table 3: Variables extracted for analysis**

General variables extracted:	Variables extracted for both 2 year and 3.5 year consultations:
<ul style="list-style-type: none"> <li>- Date of birth</li> <li>- Local Government Area from which data were extracted</li> <li>- Gender</li> <li>- Postcode</li> <li>- Birth weight in grams</li> <li>- Method of feeding at age 6 months</li> <li>- Whether child is indigenous</li> </ul>	<ul style="list-style-type: none"> <li>- Date of consultation</li> <li>- Local Government Area in which the measurements were taken</li> <li>- Maternal and Child Health Centre at which measurements were taken</li> <li>- Height in centimetres</li> <li>- Weight in grams</li> </ul>

In total, data for 191,179 children were received from the databases of 41 of the 60 eligible local government areas (68% of eligible, 52% of entire state). Of these, 150,555 were data for the 2 year consultation, 122,202 were data for the 3.5 year consultation and 43% of children (81,578) had data available for both consultations. The length of time from which electronic data was collected in each LGA varied considerably. The earliest data available was for measurements from the 1<sup>st</sup> July 1998. In 1998, 22 LGAs had data for 2 year old consultations, and 17 had data for 3.5 year consultations. This increased to 28 and 24 respectively in 1999, the first full year of electronic data collection. The details of how many areas were represented each year and how much data were extracted in total for each year is shown below in table 1. The participating LGAs were a mix of metropolitan, regional and rural, and of high and low SES areas. In this larger dataset all extreme values were removed for height, weight and age.

**Table 4 Number of children and number of LGAs represented by year of consultation / measurement**

Year	2 year old consultations		3.5 year old consultations	
	Total children	Number of LGAs	Total children	Number of LGAs
1998	2,702	22	1,297	17
1999	7,382	28	4,919	24
2000	9,850	32	6,759	28
2001	12,876	35	9,128	31
2002	14,922	37	12,157	34
2003	17,077	39	14,187	35
2004	19,425	40	15,967	39
2005	20,905	40	18,062	40
2006	21,749	41	19,285	41
2007	23,667	41	20,441	41
Total	150,555		122,202	

Of those who attended the 2 year consultation, 87% (131,288) had complete and plausible data (height, weight, age, gender; available and valid according to criteria outlined above) for analysis as did 79% (97,064) of those who attended a 3 ½ year consultation. A total of 61,478 had complete data for both consultations (32% of entire dataset, 75% of those who had attended both consultations).

A large proportion of those excluded from analysis was due to children being aged outside the ranges under analysis at the time of measurements, rather than data quality issues. Further data were missing at various rates for postcode, breastfeeding and indigenous status, therefore reducing the number of cases available for analysis relating to these factors. Table 4 below shows the number of cases with complete data available for general analysis (age, gender, height and weight) and the number available for analyses including SES, breastfeeding or indigenous status, respectively.

**Table 5: Number of 2 year olds and 3 ½ year olds available for each type of analysis (not cumulative)**

	2 year olds	3 ½ year olds
Age, gender, height & weight	131,288	97,064
- plus postcode (SES)	124,818	91,420
- plus breastfeeding	123,161	84,970
- plus indigenous status	103,265	69,391

### **Determination of Weight Status**

The anthropometric data was available for both the intervention and comparison communities at baseline (2004) and follow-up (2007), and is repeat cross-sectional in nature. This data was used to determine body mass index (BMI), standardised body mass index (zBMI) and weight status (using the IOTF Cole classification (Cole, Bellizzi et al. 2000; Cole, Flegal et al. 2007)) for children who attended their 2 year old and 3.5 year old MCH child health check. This data were then used for outcome analysis, which is currently underway.

## Conclusions and Recommendations

---

Comprehensive and multi-level evaluation of community intervention programs is essential. To do so, a number of assessment tools are needed for formative, process, impact and outcome evaluation. This approach was used for the evaluation of *Romp & Chomp* and further, in an action research model, the baseline data was used to inform the intervention activities in each of the services and contributed toward strengthening the evidence base for future community based obesity prevention projects.

The instruments developed and used in *Romp & Chomp* may be useful for the evaluation of other similar intervention projects although through use of the data we have found refinements that could improve the methods further.

*Romp & Chomp* helped support kindergartens in the Greater Geelong region who participated in the project to introduce water only and healthy foods policies. The improvements in the foods children brought to kindergarten were encouraging and unhealthy food consumption decreased while the number of healthy foods brought increased. Of particular note was the increase of the number of healthy snacks brought to kindergartens and the corresponding decrease of unhealthy snacks.

The average time spent in organised active play was above 30 minutes per day although only a low proportion of kindergartens had active play policies (1 out of 38). The Geelong Kindergarten Association (GKA) is in the process of implementing a health, nutrition and well being policy, which will incorporate an active play policy. It is important to ensure that the independent kindergartens (those not affiliated with GKA) are also encouraged and supported to introduce similar active play policies.

Further impact and outcome evaluation is currently underway and will be made available in the future.

## References

---

- American Academy of Pediatrics (2001). "Children, adolescents, and television." Pediatrics **107**(2): 423-6.
- Cole, T. J., M. C. Bellizzi, et al. (2000). "Establishing a standard definition for child overweight and obesity worldwide: international survey." BMJ **320**(7244): 1240-3.
- Cole, T. J., K. M. Flegal, et al. (2007). "Body mass index cut offs to define thinness in children and adolescents: international survey." BMJ **335**(7612): 194.



## Appendices

### Appendix 3.A: *Romp & Chomp* Evaluation Plan

Objective 1: **To increase the capacity of relevant Geelong organisations to promote healthy eating and physical activity**

Measure	Instrument	When
<b>Process:</b>		
• Project structures: stakeholders, Terms of Reference, Committees, meeting minutes	Process Data	2005-2008
• Project coordinators/workers work plans, diaries, time allocations etc	Process Data	2005-2008
• Formation of Action Plan, project coordination, project brief	Process Data	2005-2008
• Versions of the action plans, Gantt charts, and other implementation documents	Process Data	2005-2008
• Training of EC workers and allied health professionals	Process Data	2005-2008
• Presentations, publications, workforce development	Process data/Project Progress reports	2005-2008
<b>Impact:</b>		
• Integrated into health promotion plans (health services, local Government)	Process Data	2005-2008
• Improved practices in early childhood settings	Settings Surveys: LDC, FDC, Kinders	2005, 2007, 2008
• Improved confidence of staff in early childhood settings to address issues with parents	Settings Surveys: LDC, FDC, Kinders	2005, 2007, 2008
<b>Outcome:</b>		
• Organisational changes-reorientation of existing staff and Integration of health promotion strategies into the organisation's activities	Key Informant Interviews, Community Capacity Index	2008
• Implementation of HE & PA initiatives in early childhood settings	Settings Surveys: LDC, FDC, Kinders Registrations/awards for K-GFYL	2005, 2007, 2008
• Increased number of health promotion initiatives/activities in the region	Community Capacity Index	2008
• Implementation & activation of policies in early childhood settings	Settings Surveys: LDC, FDC, Kinders	2005, 2007, 2008

Objective 2: **To increase the awareness of the project's key messages in homes and early childhood settings**

Measure	Instrument	When
<b>Process:</b>		
<ul style="list-style-type: none"> <li>Design, develop and test key messages</li> <li>Distribution of Social Marketing materials</li> </ul>	Process Data: From invoices for printing and resource inventories, press releases, SM plan	2006-2008
<ul style="list-style-type: none"> <li>Presence at community festivals targeting (young) children</li> </ul>	Process Data	
<b>Impact:</b>		
<ul style="list-style-type: none"> <li>Awareness of <i>Romp &amp; Chomp</i> by parents</li> </ul>	Festival Surveys of Parents (~100 each festival)	2006, 2007, 2008
<ul style="list-style-type: none"> <li>Awareness of <i>Romp &amp; Chomp</i> by staff in ECS</li> </ul>	Settings Surveys Key informant interviews	2006, additional questions need to be added to the FU settings survey to ask about this Surveys at GKA annual conference
<b>Outcome:</b>		
<ul style="list-style-type: none"> <li>Recollection of KM messages by staff in ECS</li> </ul>	Settings Surveys M&CH nurse survey (to be developed)	2006, 2008 additional questions added to survey to ask about this Surveys at GKA annual conference
<ul style="list-style-type: none"> <li>Recollection of KM messages by parents</li> </ul>	Festival Surveys of Parents (~100 each festival)	2006, 2007, 2008

**Objective 3:** To evaluate the process, impact and outcomes of the project

Measure:	Instrument	When
<b>Process:</b>		
• Formative processes recorded by project staff		2005-2008
• Evaluation of training, resource use, kindergarten implementation etc		2005-2008
• Evaluation Plan		2005-2008
<b>Impact:</b>		
• Project Progress reports, social marketing plan, communication plan etc		
• EC Settings surveys	EC Settings surveys	2005, 2007, 2008
• Eating and Activity Survey	Eating and Activity Survey	2005/6, 2007/8
• Community Capacity Index	Community Capacity Index	2008
• Maternal Child Health growth data	Maternal Child Health growth data	1998-2008
<b>Outcome:</b>		
• Process Evaluation	Primary measure: Implementation of the action plan	2005-2008
• Impact Evaluation	Primary measures: Behaviour change, improvements in EC settings, increased capacity	2005/6, 2007/8
• Outcome Evaluation	Primary outcome measure(s): weight, BMI, z-BMI, decrease in trend (overweight/obesity) compared to comparison groups	2005-2008

Objective 4: **To significantly decrease consumption of high sugar drinks and promote consumption of water and milk.**

Measure:	Instrument	When
<b>Process:</b>		
<ul style="list-style-type: none"> <li>Develop SM materials for parents (postcards)</li> <li>Obtain water bottles for children</li> <li>Social Marketing to parents through ECS, festivals, press releases</li> <li>Water bottles for children in ECS</li> </ul>	Social Marketing plan  Social Marketing plan	2005-2008  2005-2008
<b>Impact:</b>		
<ul style="list-style-type: none"> <li>Adoption of drinks policies in ECS</li> <li>Increased awareness of this Key Message by parents and EC staff</li> </ul>	EC Settings Surveys Festival Evaluation Forms	2005, 2008 2006, 2007, 2008
<b>Outcome:</b>		
<ul style="list-style-type: none"> <li>Activated policies in LDC, FDC, kindergartens to restrict sweet drinks and promote water</li> <li>Reduced proportion of children in ECS that bring sweet drinks</li> <li>Reduced proportion of children aged 2 and 3 ½ years that had sweet drinks 'yesterday'</li> <li>Reduced amount of sweet drinks consumed 'yesterday' by children aged 2 and 3 ½ years</li> <li>Increased amount of water &amp; milk consumed 'yesterday' by children aged 2 and 3 ½ years</li> </ul>	EC Settings Surveys  Kindergarten Surveys on foods and drinks  Eating and Activity Survey Eating and Activity Survey Eating and Activity Survey	2005, 2008  2006, 2007, 2008  2005/6, 2007/8 2005/6, 2007/8 2005/6, 2007/8

**Objective 5:** To significantly decrease consumption of energy dense snacks and increase consumption of fruit and vegetables

Measure	Instrument	When
<b>Process:</b>		
<ul style="list-style-type: none"> <li>Develop SM materials for parents (postcards)</li> <li>Obtain and distribute S4M lunch boxes to children in kindergartens</li> <li>Social Marketing to parents through ECS, festivals, press releases</li> <li>Snack food policies implemented in ECS</li> </ul>	Process Data	2005-2008
	Process Data , Social Marketing plan	2005-2008
<b>Impact:</b>		
<ul style="list-style-type: none"> <li>Awareness of this KM by parents</li> <li>Decreased proportion of children who bring EDS and increased proportion who bring fruit and vegetables to kindergarten</li> <li>Awareness of this Key Message by EC staff</li> <li>Start right, eat right implemented in LDC</li> </ul>	Festival Evaluation Forms	2006, 2007, 2008
	Kindergarten Surveys on foods and drinks	2006, 2007, 2008
	Settings Survey/ M&CH nurse survey	2008
	Community capacity Index, Settings surveys	2008
<b>Outcome:</b>		
<ul style="list-style-type: none"> <li>Activated policies in LDC, FDC, kindergartens to restrict ED snacks and promote fruit and vegetables</li> <li>Increased proportion of ECS that have implemented SR,ER</li> <li>Reduced proportion of children in ECS that bring ED snacks</li> <li>Reduced proportion of children aged 2 and 3 ½ years that had ED snacks 'yesterday'</li> <li>Reduced amount of ED snacks consumed 'yesterday' by children aged 2 and 3 ½ years</li> <li>Increased amount of fruit &amp; vegetables consumed 'yesterday' by children aged 2 and 3 ½ years</li> <li>Reduced proportion of children aged 2 and 3 ½ years that 'usually' have take away</li> </ul>	EC Settings Surveys	2005, 2008
	EC Settings Surveys	2006, 2007, 2008
	EC Settings Surveys	2005/6, 2007/8
	Eating and Activity Survey	2005/6, 2007/8
	Eating and Activity Survey	2005/6, 2007/8
	Eating and Activity Survey	2005/6, 2007/8
	Eating and Activity Survey	2005/6, 2007/8

**Objective 6:** To significantly increase active play at home & decrease TV viewing time.

Measure	Instrument	When
<b>Process:</b>		
• Develop and pilot SM materials for parents (postcards and newsletters)	Social Marketing plan Process evaluation	2005-2008
• Develop series of Active Play 'Tip sheets' for M&CH nurses to distribute	Process evaluation	2005-2008
• Dissemination of AP 'Tip Sheets' and postcards (18 month visit) through M&CH centres	Social Marketing plan	2005-2008
• Dissemination of Social Marketing (newsletters and postcards) through ECS	Social Marketing plan	2005-2008
<b>Impact:</b>		
<b>Outcome:</b>		
• Reduced amount of screen time 'yesterday' by children aged 2 and 3 ½ years	Eating and Activity Survey	2005/6, 2007/8
• Increased number of times children aged 2 and 3 ½ years taken 'somewhere' to be physically active in the past week	Eating and Activity Survey	2005/6, 2007/8
• Decreased proportion of children aged 2 and 3 ½ years who 'usually' choose to spend their free time in inactive pastimes	Eating and Activity Survey	2005/6, 2007/8

**Objective 7:** To increase structured active play in kindergarten and child care settings.

Measure	Instrument	When
<b>Process:</b>		
<ul style="list-style-type: none"> <li>Develop, pilot and evaluate a structured active play (SAP) resource for ECS</li> </ul>	Process evaluation SOFIT in LDC	2005-2008 2007 2007
<ul style="list-style-type: none"> <li>Develop a training program for EC staff in active play and fundamental movement skills</li> </ul>	Process evaluation Leisure Networks development records	2005-2008
<ul style="list-style-type: none"> <li>Develop an Active Play policy for ECS</li> </ul>	Process evaluation	2007
<b>Impact:</b>		
<ul style="list-style-type: none"> <li>Implement the SAP program in ECS, incorporation into the curriculum</li> </ul>	EC Settings Surveys	2005, 2008
<ul style="list-style-type: none"> <li>Increased knowledge and skills of EC staff in active play and fundamental movement skills</li> </ul>	EC Settings Surveys, AP surveys for EC staff	2005, 2008
<ul style="list-style-type: none"> <li>Increased equipment in ECS to implement SAP</li> </ul>	EC Settings Surveys	2005, 2008
<ul style="list-style-type: none"> <li>Activation of AP policy in ECS</li> </ul>	EC Settings Surveys	2005, 2008
<b>Outcome:</b>		
<ul style="list-style-type: none"> <li>Increased time allocated to in active play in sessions</li> </ul>	EC Settings Surveys	2005, 2008

**Objective 8:** To achieve an integrated population growth monitoring program within Maternal & Child Health

Measure	Instrument	When
<b>Process:</b>		
<ul style="list-style-type: none"> <li>Process of data extraction and cleaning</li> <li>Data handling and analysis programs written</li> </ul>	Cleaning and analysis documents Stata do files	2005-2007
<ul style="list-style-type: none"> <li>Professional Development of M&amp;CH nurses on measurement and weight classification systems for young children</li> <li>Training for COGG staff in use of M&amp;CH monitoring data to track childhood obesity</li> </ul>		
<b>Impact:</b>		
<b>Outcome:</b>		
<ul style="list-style-type: none"> <li>Increased technical capacity of COGG staff to measure overweight and obesity in young children</li> </ul>	Key Informant Interviews Community Capacity Index	2008
<ul style="list-style-type: none"> <li>Identified reporting systems for overweight/obesity prevalence in children across the COGG</li> </ul>	Key Informant Interviews	2008



### Eating and Physical Activity Survey (EAS)

Date \_\_\_\_/\_\_\_\_/\_\_\_\_ (M / T / W / Th / F)

#### 1. Child's Details:

Date of Birth \_\_\_\_/\_\_\_\_/\_\_\_\_ Gender: M / F

Postcode:

Birth weight:  .    kg

Current weight:   .   kg

Current height:    .  cm

2. Please indicate how many hours per week your child attends the following, and if she/ he attended yesterday:

	_____ hours per week	Attended yesterday? (please circle) Yes / No
Family Day Care?	_____ hours per week	Yes / No
Long Day Care?	_____ hours per week	Yes / No
Kindergarten?	_____ hours per week	Yes / No
Other? _____ (please specify)	_____ hours per week	Yes / No

3. Yesterday, how long did your child watch TV/videos/DVD or play computer- or video-games at home (or a friend's or relative's home)?

Morning	_____ hrs _____ mins	<input type="checkbox"/> Don't know
Afternoon	_____ hrs _____ mins	<input type="checkbox"/> Don't know
Evening (after 6pm)	_____ hrs _____ mins	<input type="checkbox"/> Don't know

4. Last week, how many times did you or a family member take your child to a playground, park, swimming pool, dance class or other place for physical activity?

\_\_\_\_\_ times last week

5. What does your child usually do when she / he has a choice about how to spend free time?

- ☐ Usually chooses inactive pastimes (i.e. TV, computer, drawing or reading)
- ☐ Just as likely to choose inactive as active pastimes
- ☐ Usually chooses active pastimes (i.e. outdoor play, dancing, sports)

6. Yesterday, how many servings of the following beverages did your child drink? (See APPENDIX B pictures – one serving equals ½ cup or 125ml)

Fruit juice	Cordial or Soft drink	Water	Plain milk	Flavoured milk
<input type="checkbox"/> none	<input type="checkbox"/> none	<input type="checkbox"/> none	<input type="checkbox"/> none	<input type="checkbox"/> none
<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4
<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5
<input type="checkbox"/> 6 or more	<input type="checkbox"/> 6 or more	<input type="checkbox"/> 6 or more	<input type="checkbox"/> 6 or more	<input type="checkbox"/> 6 or more
<input type="checkbox"/> Don't know	<input type="checkbox"/> Don't know	<input type="checkbox"/> Don't know	<input type="checkbox"/> Don't know	<input type="checkbox"/> Don't know

7. Yesterday, how many servings of the following foods did your child have?  
(see pictures for examples and serving sizes)

	Vegetables (cooked & raw veg and baked beans)	Packaged snacks (chips, cheezels, muesli bar)	Fruit (fresh, dried and tinned)	Confectionery and/or chocolate	Cake / doughnuts, sweet biscuits and muffins
One Sample Serve =	½ cup cooked vegetables or baked beans or 1 cup salad	20g pkt chips, one fruit strap or 1 muesli bar	1 apple or banana or 1 cup grapes or 1 ½ tbsp sultanas	½ regular chocolate bar or a small handful of lollies	1 small slice cake, ½ iced doughnut or ¼ regular muffin
	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None
	<input type="checkbox"/> 1/2	<input type="checkbox"/> 1/2	<input type="checkbox"/> 1/2	<input type="checkbox"/> 1/2	<input type="checkbox"/> 1/2
	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4
	<input type="checkbox"/> 5 or more	<input type="checkbox"/> 5 or more	<input type="checkbox"/> 5 or more	<input type="checkbox"/> 5 or more	<input type="checkbox"/> 5 or more
	<input type="checkbox"/> Don't know	<input type="checkbox"/> Don't know	<input type="checkbox"/> Don't know	<input type="checkbox"/> Don't know	<input type="checkbox"/> Don't know

8. How many serves of vegetables does your child usually eat each day? ("a serve" = ½ cup cooked vegetables, or 1 cup salad vegetables)

\_\_\_\_\_ serves each day

9. How often does your child eat takeaway or fast-food? (eg. Hot chips, hamburgers, chicken nuggets, sausage rolls, hot dogs, pizza)

- ☐ Less than once per month
- ☐ 1 – 3 times per month
- ☐ Once per week
- ☐ 2 – 4 times per week
- ☐ 5 – 6 times per week
- ☐ Once per day
- ☐ 2 or more times per day

### **Family Information:**

10. Does your child usually live in:

- ☐ A single parent household?
- ☐ A two parent household?
- ☐ Two different households?
- ☐ Other \_\_\_\_\_

11. a) What is the highest education level of the child's mother?

- ☐ Did not complete high school
- ☐ Completed high school (Year 12)
- ☐ TAFE
- ☐ University
- ☐ Don't know

b) What is the highest education level of the child's father?

- ☐ Did not complete high school
- ☐ Completed high school (Year
- ☐ TAFE
- ☐ University
- ☐ Don't know

Please now place the completed survey and the consent form in the envelope provided and place in the collection box

*Thank-you for taking the time to complete this survey, your assistance is greatly appreciated*

### 1. POST LUNCH AND SNACK SURVEY EXAMPLE

Please record the **number of children** that bring at least 1 of the following items.

It is not necessary to record the number of those items brought by each child. E.g. A child brings a juice, a cordial, a roll-up and fruit yoghurt. This would be recorded as 1 under sweet drinks, 1 under packaged high fat/ sugar food and 1 under healthy snacks.

Note:

- Complete the survey on a typical kindergarten session

FOOD ITEM	Day 1 Date:	COMMENTS
WATER		
SWEET DRINKS (i.e. cordial, soft drink, fruit juice, fruit juice drinks, flavoured milk)		
PLAIN MILK		
FRESH FRUIT/ VEG		
PACKAGED HIGH FAT/ SUGAR FOOD (e.g. roll-ups, tiny teddies, muesli bars, potato chips, etc.)		
HEALTHY SNACKS (fruit or plain yoghurt, cheese & dry biscuits)		
SANDWICHES WITH HIGH SUGAR FILLING (e.g. nutella, honey, sprinkles, jam)		
SANDWICHES WITH HEALTHY FILLING (e.g. salads, coldmeats, cheese vegemite)		
OTHER (includes dried fruit - please specify)		
<b>TOTAL no. of children</b>		



**Romp and Chomp- Smiles 4 Miles**

## Appendix 3.D: Post Active Play Survey

EARLY CHILDHOOD SETTING Name: .....

Date: .....

### **Post-Active Play Survey**

Please note – ‘active play’ refers to play activities (whether organised or child-directed) in which most of the body is moving

**1. Thinking only about the last single session at your early childhood setting, please complete the following:**

(If possible please attach an example of your daily program)

- a) How long was the session? \_\_\_\_\_ hrs \_\_\_\_\_ mins  
b) How much time was allocated to free outside play? \_\_\_\_\_ hrs \_\_\_\_\_ mins  
c) How much time was allocated to active inside play? \_\_\_\_\_ hrs \_\_\_\_\_ mins  
d) How much time was allocated to organised active play  
(ie active games, sports-like activities)? \_\_\_\_\_ hrs \_\_\_\_\_ mins

**2. During time allocated to active play (inside or outside), are inactive alternatives offered to children? (i.e. drawing, puzzles etc)**

- ☒ Yes  
☐ No

**3. Please rate the adequacy of the following facilities for promoting physically active play at your early childhood setting, using the scale below:**

0 - none      1 – inadequate      2 - adequate      3 - good

	Space	Equipment	Shade & Shelter
Outdoor play area			
Indoor play area			

**4. Which of the following does the outside area at your Kindergarten have: (tick all that apply)**

- ☐ Open spaces for active play (i.e. running, jumping, ball games)  
☐ Climbing equipment  
☐ Areas for large group activities (eg organised games, dance)  
☐ Equipment or play materials that can be rearranged by children  
☐ Equipment or facilities that can be moved by staff to vary the play environment

**5. If you have a written physical activity or active play policy, is a copy of this policy provided and explained to parents?**

- ☐ Yes  
☐ No  
☐ Not applicable (do not have written physical activity or active play policy)



**Romp and Chomp- Smiles 4 Miles**

## Appendix 3.E Early Childhood Staff - Feedback

---

EARLY CHILDHOOD SETTING Name: ..... Date .....

Q1. What is your understanding of the *Romp & Chomp* Smiles 4 Miles program?

---

---

Q2. Did you find the program useful in your setting?

☐ Yes ☐ No

If yes please comment

---

Q3. Has the program supported your pre-school to promote?

a) Healthy Eating

☐ Yes ☐ No

b) Drinks

☐ Yes ☐ No

c) Active Play

☐ Yes ☐ No

If so how?

---

---

Q4. Have you had any feedback from parents?

☐ Yes ☐ No

If so what type of feedback?

---

Q5. Have you noted any changes since the program began around:

- Snack or lunchbox contents?

---

- Children's knowledge/attitudes around food, drink and/or active play?

---

- Children's behaviour?

---

Q6. How do you feel this program could be improved?

---

Q7. Do you plan to continue the program key messages in your early childhood setting?

☐ Yes ☐ No



### **Physical activity participation of three, four- and five-year old children in a long day care setting: The effectiveness of a structured active play program.**

A. Wolfe, J. Craige, A. Sanigorski, K. Stagnitti

#### **Abstract**

##### **Background/Aim:**

The growing number of physically inactive children is of great concern to public and population health and wellbeing. The aim of this study was to examine the effectiveness of a Structured Active Play Program (SAPP) in increasing the physical activity participation of children attending a long day care and kindergarten setting in Victoria.

##### **Methods:**

Twenty-five children took part in the study, twenty-one from an experimental group and four from a comparison group at two long day care centres in Victoria. An adapted version of the System for Observing Fitness Instruction Time was used to evaluate the physical activity, lesson context and teacher interactions during free play periods. Base-line measurements were taken, the Structured Active Play program was implemented, and follow-up data collection took place to explore any changes that may have occurred as a result of the program. A case-comparison methodology was used to observe thirty-four 3-year-old children

##### **Results:**

Results showed that the implementation of the SAPP was successful in increasing children's moderate-to-vigorous physical activity participation during free play periods. There was little change in teacher interactions as a result of the program, and weather was considered to have minimal effect on the physical activity participation of children during outdoor free play periods. It was shown that the SAPP did have a positive influence on girls' physical activity, and environmental factors such as age of play peers were found to influence children's physical activity participation.

##### **Conclusion:**

This study has shown that a physical activity program such as the SAPP has the potential to increase and promote physical activity participation with four- to five- year old children in a long day care setting.

## **Appendix 3.C The SAPP - Gross motor development of children from a lower SES**

### **The 'Structured Active Play Program': Evaluating its use on the gross motor development of children from a lower socio-economic status**

R. Kenna, M. Malakellis, A. Sanigorski, K. Stagnitti

#### **Abstract**

##### **Background and Aims:**

The fundamental movement skills (FMS) of children in their preschool years need to well developed to ensure they maintain a positive attitude towards physical activity and instil active lifestyles. Australian children from disadvantaged families are at increased risk of delays in their FMS acquisition, with physical inactivity and obesity as concerning consequences. The aims of this multidisciplinary study were to assess the FMS of disadvantaged children and evaluate how effective a FMS program was at improving skill acquisition when incorporated into a broader childhood development program for disadvantaged families.

##### **Methods:**

The FMS of children aged 1.5 to 5 years were assessed by the gross motor component of the Peabody Developmental Motor Scales- 2<sup>nd</sup> Edition (PDMS-2) before (n=26) and after (n=16) an intervention that integrated FMS activities into a broader program for children from disadvantaged families.

##### **Results:**

At base-line the children's locomotion, object manipulation and Gross Motor Quotient (GMQ) scores were significantly below the mean norm-reference of the PDMS-2 ( $p < .05$ ). Improvements were found from base-line to follow-up in the locomotion (8.35 to 9.5;  $p = .009$ ), stationary (9.4 to 10.6;  $p = .07$ ) and object manipulation (8.6 to 9.6;  $p = 0.04$ ) sub-test scores and in the GMQ scores (92.6 to 99.3;  $p < .01$ ) after participation in the intervention program (M= 22.6 weeks; SD= 4.4 weeks)

##### **Conclusion:**

This study has found delays in the development of FMS of disadvantaged preschoolers and an intervention of FMS activities to significantly improve these skills, over a relatively short period of time.