Metro-Auckland DHB Healthy Weight Action Plan for Children

2017-2020

Foreword

The three Auckland metro DHBs – Auckland, Waitemata and Counties Manukau - have worked together to develop this Healthy Weight Action Plan for Children. While it is recognised that a range of activity across a range of sectors will be needed to impact on unhealthy weight this plan is primarily focused on describing the contribution the health sector can make to larger societal efforts.

We believe that the actions outlined within this Action Plan will contribute towards the cross-sectoral response required to address childhood weight management. Taking a life-course approach, and collaborating with our external partners to improve the nutrition and physical activity environments of our populations, is critical to enable a meaningful impact on childhood weight management. We place particular importance on ensuring the actions of this plan meet the needs of our Māori and Pacific populations who are disproportionately affected by this issue.

We acknowledge and thank all our external partners who have collaborated with us to develop this plan.

Acknowledgements

It is a privilege to present the Metro-Auckland DHB Healthy Weight Action Plan for Children 2017-2020, the first joint child healthy weight action plan for Auckland, Counties and Waitemata DHBs.

Firstly, at the centre of this plan, we would like to acknowledge the Tamariki of the Auckland Region of New Zealand. Ko te ahurei o te tamaiti arahia o tatou mahi – let the uniqueness of the child guide our work.

The plan has been developed collaboratively across the region with input from multiple stakeholders. We would like to thank the following organisations who, along with colleagues from Auckland DHB, Counties Manukau Health and Waitemata DHB, provided feedback on the plan:

Aktive
Auckland Regional Public Health Service
Harbour Sport
Heart Foundation and Pacific Heartbeat
Healthy Auckland Together (HAT) Interagency Group
Healthy Families Waitakere
Metro Auckland Clinical Governance Forum
Northern Region Child Health Network
Northern Region Child Health Network Healthy Weight Working Group
Te Whanau O Waipareira
The University of Auckland
Toi Tangata

We know that we cannot achieve this alone. We look forward to working in partnership with communities, key stakeholders, providers and other sectors to learn new ways of achieving better health outcomes for our Tamariki.

Vision

"All Tamariki in the Auckland Region of New Zealand are of a healthy weight"

Contents

Glossary

ARDS	-	Auckland Regional Dental Service
ARHP		Auckland Regional Health Pathways
ARPHS	-	Auckland Regional Public Health Service
Auckland DHB	-	Auckland District Health Board
B4SC	-	B4 School Check
BFHI	-	Baby Friendly Hospital Initiative
BMI	-	Body Mass Index
CM Health	-	Counties Manukau Health (Counties Manukau DHB)
ECE	-	Early Childhood Education
Enua Ola	-	Enua Ola project aims to increase levels of physical activity and improve nutrition amongst Pacific adults using a community action approach
GP	-	General Practitioner
GDM	-	Gestational Diabetes Mellitus
HFW	-	Healthy Families NZ Waitakere
HFMMP	-	Healthy Families NZ Manukau, Manurewa-Papakura
HIC	-	High income countries
HVAZ	-	Healthy Village Action Zones
HBHF	-	Healthy Babies Healthy Futures programme
HPS	-	Health Promoting Schools
LC	-	Lactation Consultant
LMCs	-	Lead Maternity Carers
LMIC	-	Low and middle income countries
Lotu Mo'ui	-	Partnership between CM Health and Pacific churches and communities in Counties Manukau to work together to improve health outcomes for Pacific people.
MoH	-	Ministry of Health
NGO	-	Non-Government Organisation
PHO	-	Primary Health Organisation
Waitemata DHB	-	Waitemata District Health Board
WCTO	-	Well Child Tamariki Ora provider
Whānau ora	-	An approach that places families/whānau at the center of service delivery
WHO	-	World Health Organisation

Executive summary

Supporting children to maintain a healthy weight throughout childhood is an important part of giving them the best start to life. In order to achieve this we must work with families and communities to address the environments and behaviours that can make it difficult for both children and adults to eat healthily and keep active across their lifetime. This includes encouraging mothers prior to and during their pregnancy to achieve a healthy weight, encouraging breastfeeding and healthy infant feeding, and identifying and working with children and families who are struggling to maintain a healthy weight in childhood and adolescence.

As District Health Boards[1] (which includes community, primary care and secondary services), we have two important roles:

- Firstly to collaborate with other partners across systems and communities to address the pervasive environmental influences that make it harder to make healthy choices. A number of factors including the built, transport and physical activity environments, the constitution, supply and marketing of food and the wider political and socio-cultural context, can encourage behaviours and choices that may not be in the best interests of a child's health. It is essential that we collaborate and advocate for policies and processes that work towards making the healthy choice the easy choice for individuals. This work is being led out of the Auckland Regional Public Health Service (ARPHS) through Healthy Auckland Together (HAT).

- Secondly we have a specific role and responsibility to promote individual and population health. Through primary care, community and secondary services we encounter many opportunities to provide health information and create supportive environments to enable staff and the communities we serve to be healthier. This can include where services are directly provided, and where we fund and work with others to provide health care services.

This plan is focused on articulating the role health services have in contributing to children maintaining a healthy weight. The plan should be considered as describing one segment of a range of activity that is needed to achieve the vision that "All Tamariki in the Auckland Region of New Zealand are of a healthy weight". Importantly the work of HAT is referenced, however, detail is not provided in this plan. It is intended that the HAT Plan 2015-2020 be read in conjunction with this plan. Consideration needs to be given to the changes required outside the health sector in order to see health gains for our population.
The Northern Regional Child Health Network will co-ordinate, support and monitor the implementation of the plan with ultimate accountability sitting with District Health Boards.

[1] A brief summary of the health status and health needs of our populations, across the three metro-Auckland DHBs, will be available in a separate document (metro-Auckland DHB Healthy Weight Strategic Plan).

Summary of Actions

This Action Plan is a living document that will continue to be developed in the coming months and years. There is an expectation that as the plan matures there will be greater harmonisation across the region.

1. Women of Childbearing Age

Scientific research confirms that the influences that alter risk of obesity in childhood begin prior to conception and persist throughout growth and development into adulthood. As many pregnancies are unplanned it is important that the total population is of a healthy weight.

Women of Childbearing Age					
Adult Obesity and Co-morbidities					
Actions	**Timeframe**	**Responsibility**	**Measures**	**DHB**	**Additional resource required**
Survey Pacific women and men who have maintained weight loss from the Aiga challenge for three years regarding enablers to weight loss maintenance by December 2016 and utilise survey findings in a review of the Aiga challenge.	Dec 2017	Pacific Health Portfolio Manager	% who have maintained weight loss in past 3 years; narrative enablers to weight loss/maintenance documented (Y/N)	WDHB/ ADHB	N
Investigate access barriers to bariatric surgery for Māori and Pacific women of child bearing age	Jun 2018	Director Health Outcomes	Bariatric surgeries in 2017/18 by ethnicity (Maori/Pacific)	ADHB/ WDHB	N
Scope what an Adult Obesity Service (intensive lifestyle intervention Tier 2-3 service) might look like as part of the bariatric pathway	Dec 2017	Director Health Outcomes	Complete (Y/N)	ADHB/ WDHB	N

Actions	Timeframe	Responsibility	Measures	DHB	Additional resource required
Promote Green Prescription to primary care and identify and address barriers to primary care referrals	Jul 2018, Jul 2019, Jul 2020	Public Health Registrar (WDHB/ADHB); Primary Care Portfolio Manager (CM Health)	# of adults enrolled in Green Prescription by ethnicity (Maori/Pacific)	All	N
Healthy Food Environments					
Implement the National Healthy Food and Drink Policy in DHB-owned sites Complete baseline audit Complete follow-up audits	Jul 2018, Jul 2019	Public Health Dietitian and Food Service Manager (WDHB/ ADHB); Food Service Manager & Clinical Director Population Health (CM Health)	50% compliance 100% compliance	All	N
Work with ARPHS and Healthy Families NZ through Healthy Auckland Together (HAT) to implement the National Healthy Food and Drink Policy for Organisations in the community.	Dec 2018	Public Health Dietitian (ARPHS); Clinical Director Population Health (CM Health)	# of community organisations who have implemented the Policy	All	N
Work with DHB contracted providers to support implementation of aligned healthy food and drink policies		As above	# of providers who have implemented the Policy	All	N

2. Pregnant Women and Infants

We know that the risk of obesity can be passed from parents to children. Babies whose mothers begin pregnancy already obese or suffering from diabetes, or whom develop Gestational Diabetes (GDM) pre-dispose the child to develop increased fat deposits which are associated with future metabolic disease and obesity. The way that children are fed early in life will further influence their risk of developing obesity and the balance of evidence suggests breastfeeding confers some protection against this.

Pregnant Women and Infants					
Pregnancy					
Actions	**Timeframe**	**Responsibility**	**Measures**	**DHB**	**Additional Resource Required**
Ensure culturally appropriate antenatal education available to promote and support breastfeeding	On-going	Child, Youth and Women Team Leader (WDHB/ADHB); Maternity Integration Manager (CM Health)	Deliver contracted volumes of breastfeeding related programmes with 80% of services delivered to priority populations (Maori, Pacific, Q5)	All	N
<u>WDHB/ADHB</u> Continue to support the implementation of the Healthy Babies Healthy Futures (HBHF) programme:					
• Providing women and their families with key breastfeeding messages through textMATCH messaging, community promotion, and teaching practical skills for better nutrition and increased physical activity	On-going	HBHF Programme Manager	% of target (1000) and # of people receiving textMATCH service	WDHB/ ADHB	N
• Working with partners to engage with specific vulnerable community groups (Māori, Pacific, Asian, and South Asian)	Jun 2018	HBHF Programme Manager	% of target (1000) and # of mothers engaged in healthy conversations	WDHB/ ADHB	N
• Further strengthen HBHF connections with	Dec 2017	HBHF Programme	# of Community Learning	WDHB/	N

Actions	Timeframe	Responsibility	Measures	DHB	Additional Resource Required
maternity services, Kohanga reo, Churches and ECEs to increase access to the HBHF programme		Manager	Programme (CLP) groups held within community settings	ADHB	
• Promoting HBHF to pregnant mothers at the earliest possible stage when engaging with DHB services	Dec 2017	HBHF Programme Manager	% of target (2000) and # of mothers given the opportunity to engage with a HBHF provider	WDHB/ ADHB	N
<u>CM Health</u> Continue the development of Te Rito Ora service and B4 baby services, which engage with women in antenatal period to support breastfeeding	Jun 2018	Child Health Service Development Manager	70% women accessing the service will be fully/exclusive breastfeeding at 6 weeks (aligned to the WCTO indicator targets)	CM Health	N
Work with Lead Maternity Carers (LMCs) to ensure heights and weights are recorded on booking form. Education to ensure this is measured rather than self-reported.	On-going	Women's Health Senior Programme Manager (ADHB/ WDHB); Maternity Quality and Safety Co-ordinator (CM Health)	100% of booked women have height and weight recorded in clinical records	All	N

Actions	Timeframe	Responsibility	Measures	DHB	Additional Resource Required
Collaborate with primary care, Green Prescription providers, LMCs, DHB maternity services and HBHF to enhance referrals to Green Prescription and ensure tailored advice for pregnant women on optimal weight gain. Promote and facilitate the adoption of MoH Guidelines for Healthy Weight Gain in Pregnancy (e.g. weight gain charts)					N
• Incorporate referrals to Green Prescription and healthy weight gain in pregnancy conversations into existing Auckland Regional Health Pathways	Dec 2018	Programme Manager Primary Care; (WDHB/ ADHB); Manager/ Maternity Quality and Safety Co-ordinator (CM Health)	Health Pathways updated to include referral options for pregnant women, e.g. Green Prescription (Y/N)	All	N
• Establish a baseline(1) and increase(2) referrals of pregnant women into Green Prescription for healthy weight management	Dec 2018		# pregnant women enrolled in Green Prescription	All	
Develop Pathway for management of pregnant women with high BMI	Dec 2018	Maternity Quality and Safety co-ordinator (CM Health)	Pathway developed and implemented (Y/N)	CM Health	N

Actions	Timeframe	Responsibility	Measures	DHB	Additional Resource Required
Undertake quality research • TARGET *-Recruit women for multisite study • Gestational Diabetes Mellitus Study of diagnostic thresholds (GEMS)*- Recruit women for multisite study • Healthy Mums and Babies Study (HUMBA)**- Undertake the study in partnership with UoA, Recruit women into the HUMBA study, Implement findings into practice	Dec 2020	Principal Investigators of TARGET, GEMS and HUMBA studies	Feedback from study Principal Investigator of the progress of the 2 studies: TARGET: to complete recruitment by Oct 2017 GEMS: to have 50% recruitment by Dec 2018 HUMBA: to finish data collection by Dec 2018	All	N

* TARGET is a study to investigate how gestational diabetes Mellitus (GDM) should be treated. It is a multisite study currently underway through the Liggins Institute.
**GEMS is a multisite study currently underway through the Liggins Institute. CM Health is a contributing site. The study aims to determine the appropriate thresholds for diagnosing gestational diabetes in pregnancy.
**HUMBA is a research study underway to trial a nutritional intervention during pregnancy to study whether it can impact on outcomes for both mother and baby

Infancy

Actions	Timeframe	Responsibility	Measures	DHB	Additional resource required
Ensure culturally appropriate postnatal and community support available to promote and support breastfeeding				All	
• Enhance the pregnancy and parenting education smartphone app and website to encourage all women, particularly Māori, Pacific and Asian, to breastfeed for at least the first 6 months of their baby's life	Jun 2018	Women's Health Senior Programme Manager	% of Māori and Pacific women who breastfeed at 3 months (Target: 70% babies exclusively or fully breastfed at 3 months)	ADHB/ WDHB	Y
• Postnatal support through Titifaitama and Wahakura Wananga including peer support and breastfeeding support groups		Women's Health Senior Programme Manager	# who attend support groups	WDHB	N
• Intensive post-natal support through Te Rito Ora service including peers support and home visits		Service Development Manager Child Health	# of visits in 6 month period (Target: Kaitipu Ora workers will engage with clients a min of 3x in week 1 post-natally, and then weekly until week 12)	CM Health	N
Evaluate effectiveness of Auckland DHB breastfeeding community clinic and home visiting approach and integrate learnings into future efforts.	Mar 2018	Women's Health Senior Programme Manager	Build findings from evaluation into contract for the 17/18 financial year (Y/N)	ADHB	N

Actions	Timeframe	Responsibility	Measures	DHB	Additional resource required
Community cooking courses to support pregnant woman and parents and whānau of 0-2 year olds to make healthy, affordable and culturally appropriate meals which meet the nutrition needs of pregnant women and infants and toddlers	On-going	Service Development Manager Child Health	# participants will complete the course	CM Health	N
Evaluate the community peer/mentor support breastfeeding programme pilot to ascertain its success with Māori, Pacific and low-SES women.	Dec 2017	Women's Health Senior Programme Manager	Evaluation outcome report complete (Y/N)	ADHB/ WDHB	N
Training and Education					
Enhance the training plan for GPs, nurses and other relevant health professionals to increase their confidence in having culturally appropriate conversations about child weight and healthy lifestyles with families. Engage with families to identify solutions that work for them. Opportunities to do this include: • Providing CME /CNE sessions • Promote the use of the Child Weight Management Health Pathway, included in the Auckland Regional Health Pathways • Webinar and podcasts developed with the Goodfellow unit • Regular primary care e-updates	On-going	Child Health Senior Programme Manager (WDHB/ADHB); Service Development Manager Child Health (CM Health)	% of participants who identified an increase in confidence with having conversations about healthy weight following the sessions	All	N N

3. Children and Adolescents

The prevention and treatment of childhood obesity requires influence regarding healthy diets and healthy movement alongside individual level approaches to enable behaviour change for children, young people, caregivers and families.

Children and Adolescents

Schools and ECEs

Actions	Timeframe	Responsibility	Measures	DHB	Additional resource required
Strengthen support for schools to implement healthy food and beverage policies	Dec 2019	Public Health Dietitian (WDHB/ADHB); Project Manager Mana Kidz (CM Health)	WDHB/ADHB: 80% of contracted schools have a healthy food and drink policy. CM Health: 80% of Mana Kidz schools have a healthy food and drink policy	All	N
In collaboration with HAT and Healthy Families NZ, engage intersectorally to support a gap analysis of healthy food environments in and around Kohanga reo, Pacific Language nests and ECEs to determine areas for future DHB support	Jun 2018	Public Health Dietitian	Gap analysis complete # of Kohanga reo, Pacific Language nests, ECEs requiring support	All	N
Utilise INFORMAS survey results, along with information from the Heart Foundation, ARPHS and Healthy Families NZ sites to engage with high-priority ECEs and schools to support development and implementation of food policies and healthy food environments.	Jun 2019	Public Health Dietitian (WDHB/ADHB); Mana Kidz project office (CM Health)	# of ECEs and schools prioritised for support; # of ECEs and schools supported	All	N

Actions	Timeframe	Responsibility	Measures	DHB	Additional resource required
Obesity Intervention					
Contract a provider to deliver a comprehensive, multi-component whānau-focused physical activity, nutrition and parenting programme for pre-school children identified as being ≥98th centile, including a psychological component and development of specific approaches for Māori and Pacific populations	WDHB/ADHB Dec 2018 CM Health Mar 2017	Programme Manager Primary Care (WDHB/ ADHB); Service Development Manager Child Health (CM Health)	# of children enrolled; # of Māori and Pacific children enrolled (baseline)	All	N
Contract a provider to deliver a comprehensive, multi-component whānau-focused physical activity and nutrition programme for overweight/obese school aged children and adolescents, including specific approaches for Māori and Pacific communities	Dec 2017	Programme Manager Primary Care (WDHB/ ADHB); Service Development Manager Child Health (CM Health)	# of children enrolled; # of Māori and Pacific children enrolled	All	N
Ensure 'Raising Healthy Kids' health target is met through a suite of initiatives: • Undertake communication activities to promote and familiarise primary care / WCTO partners with target	On-going	Child Health Senior Programme Manager (WDHB/ ADHB) Service Development Manager Child Health (CM Health)	By December 2017, 95% of obese children identified in the B4SC programme will be referred to a health professional for clinical assessment and family based nutrition, activity and lifestyle interventions	All	N N

Actions	Timeframe	Responsibility	Measures	DHB	Additional resource required
• Ensure referral process for referrals from B4 school provider to primary care for children with BMI>98th centile is in place and all obese children are referred to primary care and that referral is acknowledged (electronic referral process in CM Health, paper based in ADHB/WDHB).	On-going	Child Health Senior Programme Manager (WDHB/ ADHB) Service Development Manager Child Health (CM Health)	% of declined referrals to PC programmes	All	N
• Provide community, primary and secondary care training by dietitian on use of Be Smarter brief intervention and goal setting healthy lifestyles tool and other resources so health professionals are confident to initiate conversations with families and talk about healthy weight to enable families to be as healthy as they can be	Jul 2018		# of health professionals trained		N
• Design and implement an evaluation of families and health professional engagement with Raising Healthy Kids referral pathway.	Dec 2018		Evaluation plan complete with recommendations		N
Support the implementation of the regional growth chart solution for use in secondary care in metro Auckland DHBs	Dec 2018	Regional Healthy Weight Working Group	An electronic growth chart is implemented in the metro Auckland DHBs	All	Y
Work with ARDS and the Northern Region DHBs to develop consistent health promotion messages using the common risk factor approach for obesity and oral health • Investigate translation into priority languages	Jan 2018	Child Health Senior Programme Manager & Public Health Physician (oral health)	Message alignment complete with 5 key messages agreed upon. Priority languages identified and translation services costed	All	N

Actions	Timeframe	Responsibility	Measures	DHB	Additional resource required
Scope the feasibility for a pilot to assess measuring weight and height at the year eight dental check. The aim is to facilitate collection of data for population level monitoring of trends and to feedback to parents information on their child's weight and growth. This pilot could potentially assess: • Consenting of children. • Impacts on clinic flow and staffing. • Resource requirements. • Scalability. • Data collection requirements and utility. • Communication of outcomes to parents. • Staff and consumer perspectives. • Identification of any adverse or unexpected outcomes. This would inform the assessment of whether this could be implemented across the region and the trade-off of costs compared to the potential impact of the information gained for children, their families and the sector as a whole.	Dec 2018	Regional Healthy Weight Working Group and Public Health Physician (oral health)	Pilot complete	CM Health	Y

Introduction

There is a strong social and political consensus that our New Zealand tamariki should be protected and nurtured to enable them to live happy and healthy lives. Protecting them from developing an unhealthy weight[2] and assisting them to maintain a healthy weight is an important part of how we can ensure they have the best start to life.

Rates of obesity have been rising globally in the last two to three decades in all ages, genders and ethnic groups. New Zealand has the third highest rate of obesity among Organisation for Economic Co-operation and Development (OECD) countries.(1)

In children obesity has been associated with a number of short and medium term health problems including delayed motor development,(2) asthma,(3) childhood hypertension,(4) dyslipidaemia,(5) and shares aetiological features with the development of obstructive sleep apnoea, reproductive health abnormalities and type 2 diabetes.(6-8) Unhealthy weight is associated with poorer educational attainment, psychosocial difficulties and disorders for children though it is unclear whether unhealthy weight contributes to the development of these disorders or is a comorbidity or sequelae of the disorder itself.(9)

In the long-term we know that a child in the obese weight range is more likely to be obese in adulthood.(10, 11) Helping children attain a healthy weight in childhood is likely to moderate their risk of ill health in adulthood by reducing the prevalence of obesity and associated non-communicable disease. Obesity in childhood is strongly associated with the future development of cardiovascular disease and diabetes.(12, 13) Adverse health consequences can present in adulthood despite a normal weight being attained which suggests that there is residual risk from being an obese child independent of adult Body Mass Index (BMI).(14)

High BMI in adulthood has serious health impacts and contributes to the development of non-communicable diseases including some cancers, diabetes and cardiovascular disease. This has implications for the sustainability of the health system and the economic and social future of communities more broadly. Overweight and obesity is predicted to displace tobacco as the leading risk factor for health loss in 2016.(15)

Pacific and Māori children and those living in quintile 4 and 5 (most deprived) are more likely to be at an unhealthy weight. These differences are consistent with international evidence(16) and may represent inequities in access to the socioeconomic determinants of health, varying food and physical activity environments, as well as access to care and the quality of care received; all of which influence risk of unhealthy weight, and the effectiveness of interventions.(17) It is vital that we continue to be focused on reducing these inequities. Some research has suggested that compared to other ethnic groups' Asian young people may have higher rates of body fat for a given BMI and may be more prone to central obesity. Further research and monitoring is however needed to confirm this and understand implications for intervening.

[2] Throughout this document the preference is to use the description of unhealthy weight however overweight and obesity are clinical descriptions of BMI cut off values and it is often correct to be using these terms rather than our preferred language of unhealthy weight.

High BMI can be considered a normal response to the obesogenic environment that children and adults live in.(18) It results from a complex interplay of factors including but not limited to biology, the food system, the physical activity environment, individual factors, and consequently, requires multifaceted and intersectoral solutions.

Addressing unhealthy weight is complex. It is recognised that government commitment and leadership as well as a whole-of-society approach will be required to make the significant changes needed to reverse the rates of unhealthy weight. There is a compelling logic from the literature that action to prevent and treat unhealthy weight in childhood will benefit children and the future adults they will become. Change is needed to ensure that our tamariki live in environments where fresh healthy food choices are more visible, affordable and available than unhealthy food and where environments enable and promote physical activity.

While current evidence suggests the impact of healthcare interventions on unhealthy weight in childhood are likely to be small, early intervention has the potential to benefit both the individual, with sustained improvement in health, and society as a whole through healthier and more productive citizens and reductions in the burden of non-communicable disease and preventable mortality (Appendix 1).

The development of the metro-Auckland DHB Healthy Weight Action Plan for Children has been informed by a comprehensive stocktake of existing relevant child community nutrition and physical activity services within the region (Appendix 2). The plan outlines a suite of health-led actions for preventing and managing high BMI. This metro-Auckland DHB Healthy Weight Action Plan takes a life-course approach to childhood unhealthy weight with identified key target populations including: women prior to and during pregnancy (in order to optimise the peri-conception factors which influence weight gain), pre-school and school aged children and adolescents.

While the metro-Auckland DHBs are committed to working collaboratively across the sector to improve healthy weight management, each DHB acknowledges the differences within their unique populations with differences in the numbers of Māori and Pacific children in each DHB, numbers living in the most deprived areas as well as the number of children with an unhealthy weight (Appendix 3).

Strategic Context

Globally action on high BMI in childhood has been recognised as imperative and the World Health Organisation (WHO) has formed a The Commission on Ending Childhood Obesity to lead this response, chaired by New Zealander Sir Peter Gluckman.(19) The Commission developed a framework as well as a number of recommendations for governments aimed at reducing obesity in children under five years. In addition the McKinsey Institute has developed a comprehensive discussion paper “Overcoming obesity: An initial economic analysis” which makes a strong economic argument for addressing unhealthy weight and contends that a comprehensive, systematic programme of multiple interventions is needed.(20)

The recently refreshed 'New Zealand Health Strategy: Future direction' outlines the high-level direction for New Zealand's health system over the 10 years from 2016 to 2026. It is accompanied by a Roadmap of Actions which specifically requires (Action 8) a focus on increasing efforts on prevention, early intervention, rehabilitation and wellbeing for people with long-term conditions, such as diabetes and cardiovascular disease, by addressing common risk behaviours such as high BMI and intervening at key points across the life course. Specifically: implement and monitor a package of initiatives to prevent and manage obesity in children and young people up to 18 years of age. The package should take a life-course and progression of condition approach, and ensure parents have good information and that those with greater need receive greater support. Action will be taken across a range of settings where children learn, live and play, such as schools.(21)

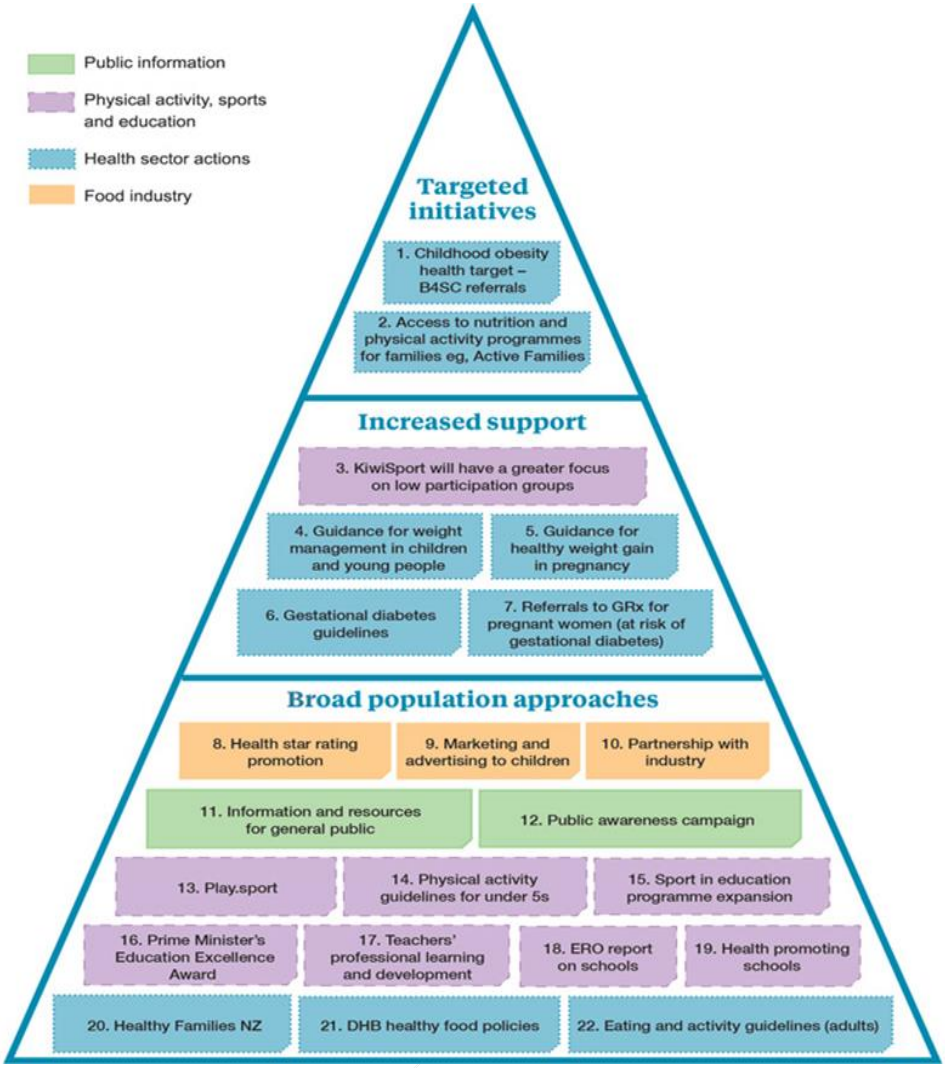
The Ministry of Health's (MoH) 2015 Childhood Obesity Plan is based on elements of the WHO Commission's advice, particularly the importance of a life-course approach to obesity, focusing on maternal, infant and child nutrition and physical activity, and the broader food environment.(22) The MoH Childhood Obesity Plan provides a package of initiatives to prevent and manage weight in children and young people up to 18 years of age. Included in this plan is a new health target for any obese four-year old children identified in the "B4 School Check" to be referred to an appropriate health professional for follow up and management.

The Childhood Obesity Plan has three focus areas and 22 initiatives, which are either new or an expansion of existing initiatives: (see Figure 1):

1. Targeted interventions for children who are identified as being obese (≥98th percentile of BMI-for-age)
2. Increased support for those children at risk of becoming obese
3. Broad approaches to make healthier choices easier for all New Zealanders.

The plan requires leadership and action across government agencies, the private sector and community sectors and settings. Nine of the 22 initiatives (initiatives 1, 2, 4-7, 20-22) are to be led by the broader Health sector and will require activity at the DHB level to develop and implement strategies to support these activities. In addition activities led by other sectors will require collaboration from the DHBs; these include the Health Promoting Schools (HPS) initiative (initiative 19), Sport NZ and the sport and recreation sector (initiatives 13, 14, 15) and the dissemination of information and resources to be developed by the MoH and the Health Promotion Agency (initiative 11).

Figure 1. Summary of the Ministry of Health's Childhood Obesity Plan



While this Metro-Auckland DHB Healthy Weight Action Plan for Children articulates our joined-up focus on healthy weight in childhood, each DHB operates within a distinct strategic framework which has informed the development of the DHB specific actions within this Plan.

Auckland and Waitemata DHB Strategic Themes

Auckland DHB and Waitemata DHBs' seven strategic themes below provide an overarching framework for the way services are planned, developed and delivered. These themes are linked to both Boards' joint priorities of better outcomes and improved patient experience.

Community, whānau and patient-centric model of care

Evidence informed decision making and practice

Emphasis and investment on treatment and keeping people healthy

Outward focus and flexible, service orientation

Service integration and/or consolidation

Operational and financial sustainability

Intelligence and insight

Counties Manukau Health - Healthy Together Strategic Plan – 2015-2020

HealthyTogether

The 'Healthy Together' is based around the following three strategic objectives:

1. Healthy people, whānau and families - together we will involve people, whānau and families as an active part of their health team
2. Healthy services – together we will provide excellent services that are well-supported to treat those who need us safely, with compassion and in a timely manner
3. Healthy communities - together we will help make healthy options easy options for everyone

'Together' means collaboration and partnership with people, whānau, families, communities, health and other providers, aiming to:

- **Provide high quality and high performing** modern specialist and hospital based services;
- **Strengthen primary and community based services** to reduce the burden of disease and prevent ill health; and
- **Achieve health improvement for all** – with targeted support for our most vulnerable people and communities.

Achieving a healthy weight for tamariki has been identified as one of the key health indicators on which Counties Manukau Health (CM Health) will measure success of the Healthy Together Strategy.

In addition Ko Awatea is currently leading a piece of work Mana Taurite: Equity in Health Campaign with three key work streams, one of which has a focus on reducing childhood obesity. A number of projects are currently underway and they listed in Appendix 4.

In thinking of how to move forward in this context the DHBs must sustain parallel streams of activity, firstly in collaboration and advocacy for system level and environmental changes, and secondly in shaping and affecting change in how health-led services are provided to reduce the impact of obesity across the life-course (Figure 2).

Taking Action on Unhealthy Weight - a way forward for the metro-Auckland region

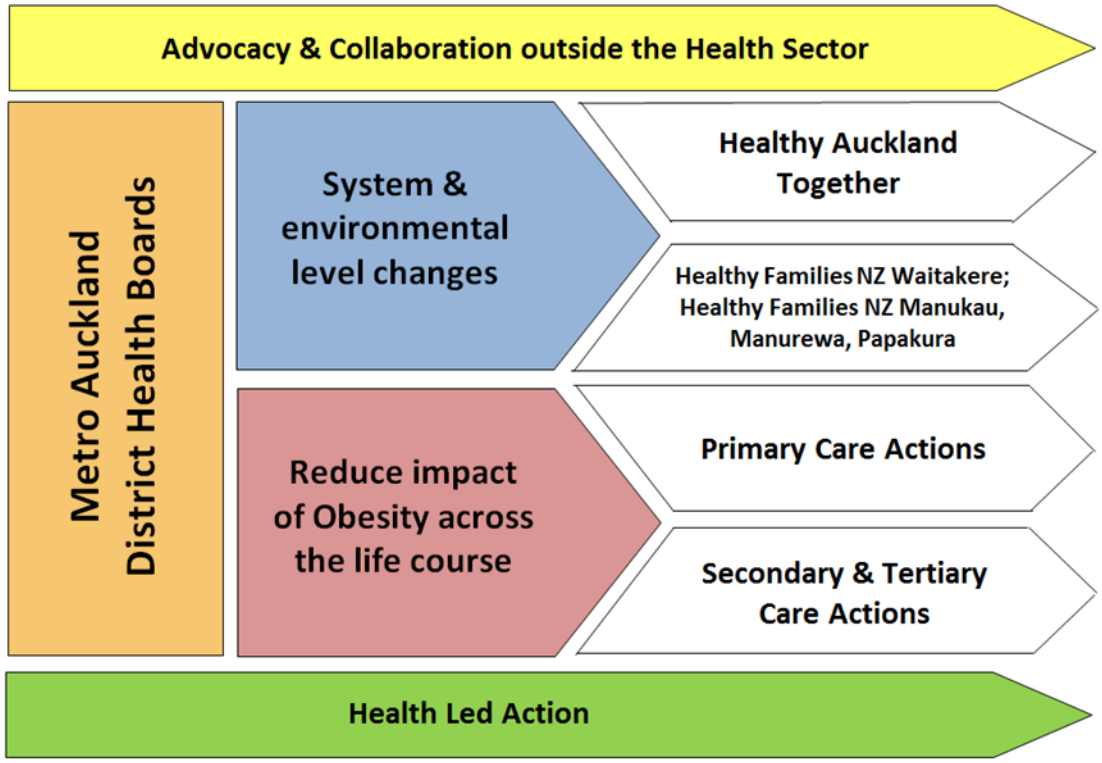
Progress to reduce the impact of high BMI for our current generation of children and their whānau, as well as for future generations, requires both support for individuals with their specific health needs (related to obesity and its associated diseases), as well as to improve the environments that children and their families live in, to increase access to healthy food, expand opportunities for sport, play and other physical activity. In addition we need to ensure that we work collectively, across the society as a whole, to facilitate people to make healthy choices.

Healthy Auckland Together (HAT) is a key regional coalition coordinated by the Auckland Regional Public Health Service (ARPHS) that aims to promote environmental change to increase physical activity, improve nutrition and reduce obesity. HAT partner agencies include: Auckland Council, Auckland Transport, the Health Promotion Agency, Aktive – Auckland Sport and Recreation, the Heart Foundation, metro Auckland DHBs, Healthy Families New Zealand, the MoH, Primary Healthcare Organisations (PHOs), Mana Whenua and Non-Government Organisations (NGOs).

The "backbone" function of this work is undertaken by ARPHS and funded by the three metro-Auckland region DHBs. HAT has developed a five year plan 2015-2020 that focuses on those aged two years and older. The plan includes actions specifically relating to schools and Early Childhood Education (ECE) settings. HAT partners are planning a range of strategic and operational activities to foster improvements in the food environment, including undertaking a gap analysis of healthy food environments in and around Kohanga reo, Pacific Language Nests and ECEs. These include supporting school decision-makers in developing healthy food environments, working with the Heart Foundation to support and expand its programme to improve the food environment in decile 1-4 schools, strengthening the focus on healthy eating and physical activity polices as part of the ARPHS pre-licencing ECE assessments and supporting active transport to and from school within our region.

Through collaborations and partnerships the broader health sector can influence and impact parts of the community from which it may have had difficulty reaching, or where by acting alone it would not have the capacity or expertise to effect change. Through the HAT partners, and the Healthy Families NZ initiative (refer *Working with our Partners* section), clear pathways for sustaining and expanding these collaborative activities exist.

Figure 2 Diagrammatic representation of DHB roles in childhood obesity



The Role of Health Services

Recommendations for a health sector response to childhood obesity have been developed by the United Kingdom's National Institute for Health and Care Evidence which identify the following strategies as essential:

- Ensuring family-based, multicomponent lifestyle weight management services for children and young people are available as part of a community-wide, multi-agency approach to promoting a healthy weight. They should be provided as part of a locally agreed weight management pathway;
- Dedicating long-term resources to support the development, implementation, delivery, promotion, monitoring and evaluation of these services;
- Raising awareness of local lifestyle weight management programmes; and
- Ensuring lifestyle weight management health professional staff are trained and have the necessary knowledge and skills.(23)

In New Zealand we can, through the health system, work to reduce child unhealthy weight by:

- Ensuring women are supported to maintain a healthy weight prior to and during pregnancy and are monitored for Gestational Diabetes Mellitus (GDM).
- Ensuring breastfeeding is supported and healthy infant feeding is sustained.
- Supporting children and their families with appropriate monitoring of weight in primary care, Well Child Tamariki Ora (WCTO) services, at the Before School Check

(B4SC) and at the adolescent HEEADSSS assessment. (It is important that the BMI of all children: Māori, Pacific, Asian, European and other ethnic minority groups, including migrants and refugees, is monitored to ensure any child identified as overweight is referred for appropriate support).

- Ensuring that health care practitioners are supported with the right tools and training so they are confident to talk to families about their child's weight in an appropriate and strength based way. Promote the use of the locally adapted Health Pathways; and
- Providing programmes that use the best evidence to support children who are in the unhealthy weight range.

The different parts of the DHB health services (primary, secondary and tertiary care), have a clear opportunity to support and drive these health-led activities. This plan is about articulating those actions so the role of the three metro-Auckland DHBs is clear, along with the work the DHBs do alongside the wider health sector (predominantly HAT) in reducing the rates of unhealthy weight.

The Northern Regional Child Health Network

The Northern Regional Child Health Network (constituted by the four Northern Region DHBs (Northland, Waitemata, Auckland and Counties Manukau) has an annual planning process which has identified achieving a healthy weight for tamariki as a priority area. A healthy weight working group has been established, with a work plan[3], to support the achievement of the network's plan. This work has been mainly focused on localising the Auckland Regional health pathway for weight management in children, improving communication across the Northern region and implementing an electronic growth charts in metro Auckland hospitals. The Northern Regional Child Health Network will co-ordinate, support and monitor the implementation of the plan with ultimate accountability sitting with the District Health Boards.

[3] This regional network work plan will be reviewed in light of the development of this plan

The Role of Primary Care

Primary Care has a particular contribution to make in supporting children, young people (and their whānau) to achieve a healthy weight. This includes traditional primary care as well as school-based health services in primary, intermediate and secondary schools.

There has been debate about the ethics of identifying overweight and obese children when the evidence for effective interventions is limited. Some are concerned about the possibility of causing harm in the form of stigmatising children and parents feeling blamed. An alternative view is that health professionals have a responsibility to identify overweight and obesity because it poses risk to children's health now and in the future.

Growth is a dynamic and fundamental marker of health in children, and growth surveillance is a core aspect of child health. Growth surveillance assists parents and health professionals to identify concerns in growth trajectory and trigger lifestyle changes that will help the child grow into a health weight. Primary care are well-placed to do this.

Raising the issue of childhood obesity with parents and caregivers can be difficult and the conversations around weight need to be managed sensitively and with skill. There is detail in the action plan regarding training for, and resources to support, Primary Care.

A specific goal of this plan is to work with primary care to identify strategies for embedding growth monitoring in primary care pathways and supporting them with technological solutions and ensuring that ongoing practice is driven by analysis and understanding of what practice level data tells them.

Culturally appropriate, tailored and targeted delivery

Metro-Auckland DHBs recognise that attitudes and beliefs regarding food and "healthy" weight differ between cultural groups, and that interventions and programmes need to be tailored to ensure they address the specific issues and needs of particular settings or groups. Differing contexts, including the settings in which communities and groups can be reached, provide unique challenges and opportunities which will influence the way in which interventions can be delivered. Understanding the sociocultural perspectives of priority populations, including Māori, Pacific and Asian, and the delivery of culturally appropriate, tailored, high quality and accessible interventions is essential for eliminating inequities. This can best be achieved by positioning priority populations as decision makers at the forefront of planning and evaluation processes. Also essential is working together with whānau. The Whānau ora approach commits to planning and delivering care based around the strengths and needs of whānau to support whānau, increasing their capacity to undertake functions necessary to promoting whānau health and wellbeing. While this approach has been developed from Māori kaupapa, using a family-centred approach is likely to resonate with other priority populations such as Pacific communities.

Metro-Auckland DHBs will hold the following determinants at centre of the continuous evaluation cycles built into this plan:
(1) relationships and social connectedness;
(2) holistic health including spiritual beliefs and cultural practices (Indigenous worldview);
(3) historical trauma and the impacts of colonisation

Working with our partners

Across metro-Auckland multiple collaborative initiatives are already in place or planned to support the prevention and management of childhood overweight. It is imperative that we work together to ensure regionally consistent messages and resources are available to support healthy eating, lifestyles and activity.

Initiatives that the DHBs are involved with are summarised below. These and further activities are described in Appendix 2 – Stocktake of existing initiatives.

- **Healthy Families NZ** is a large-scale initiative funded by the Ministry of Health that brings community leadership together in a united effort for better health. The initiative is being implemented in 10 locations around the country. Healthy Families NZ locations are led by a range of locally based organisations including Councils, Iwi and Regional Sports Trusts. There are two Healthy Families NZ locations in the Auckland region: Healthy Families Waitakere and Healthy Families Manukau, Manurewa-Papakura. The Lead Provider for Healthy Families Waitakere is Sport Waitakere and Auckland Council is the Lead Provider for Healthy Families NZ Manukau, Manurewa-Papakura. Auckland Council have established the Tamaki Healthy Families Alliance, which is a partnership between Council, Nga Mana Whenua o Tamaki Makaurau and Alliance Health Plus. The Alliance Communities Initiatives Trust (ACIT) is part of Alliance Health Plus and employs the majority of the Healthy Families Manukau, Manurewa-Papakura workforce. Taking a whole-of-community approach to prevention of chronic disease, Healthy Families NZ activates local leadership at all levels to create health change in schools, early childhood education, workplaces, sports clubs, marae, places of worship and community spaces. The initiative aims to create healthier environments for people to live healthy active lives by making good food choices, being physically active, sustaining a healthy weight, being smokefree and moderating alcohol consumption. Each Healthy Families NZ site has a local strategic leaders group with individual and collective spheres of influence across a multitude of sectors and settings who are supporting, driving and influencing healthy change in their communities. Waitemata DHB participates in the Healthy Families Waitakere strategic leaders group. Counties Manukau Health currently engages operationally with Healthy Families Manukau, Manurewa-Papakura but does not participate in their Prevention Partners Leadership Group.

- **Healthy Babies Healthy Futures (HBHF)** is a community-based obesity prevention and reduction programme aimed at improving maternal and infant nutrition and physical activity for Māori, Pacific and Asian pregnant women, young mums and their families in Waitemata DHB and Auckland DHB. The programme utilises a community development approach, and involves an innovative text-based health information component. The programme is currently being evaluated.

- **Te Rito Ora** is a free community based service that provides breastfeeding and baby feeding support for mothers and babies who live in Counties Manukau.
  The service provides:

- Antenatal in-home breastfeeding education (from 31 weeks)
- Intensive in-home postnatal breastfeeding support
- Community based Lactation Consultant (LC) Service for mothers with more difficult or complex breastfeeding issues
- Breastfeeding support groups and peer supporter programme

The programme is currently being evaluated.

- **The B4 School Check (B4SC)** is a health and social assessment programme for four year olds, which is undertaken in a variety of settings including the home environment and clinics. The B4SC includes a growth assessment using height, weight and BMI. Children with a BMI equal to or over the 98th percentile are given advice on healthy eating and an active lifestyle, and referred to their General Practitioner (GP) and, where available, to a community physical activity and nutrition programme.

  In ADHB/WDHB, Green Prescription Active Families is the main physical activity and nutrition programme available to the community, but as it is contracted to provide for five to 18 year olds, the programme currently only allows four year olds to attend as family members of an older sibling that is referred. In CM Health, a pre-school Active Families programme, Active Futures, is available in the community. There is now also a B4SC community worker home visiting service available in the metro Auckland area to provide additional visits to families where a child is identified as being of an unhealthy weight at the B4SC. This service provides culturally appropriate advice and information, and support to families to make, and sustain, a range of healthy lifestyle choices with the goal that the child will grow into a healthy weight. Well Child Tamariki Ora work more broadly also provides breastfeeding support, nutritional advice and regular growth monitoring. Increasingly it is being recognised that growth needs to be discussed at each WCTO contact, with appropriate advice about nutrition, healthy weight gain and weaning foods.

- **Green Prescription** is a health professional's written advice to an adult (18+) patient to be physically active, as part of the patient's health management. It is a MoH funded programme that aims to increase physical activity levels in line with the NZ Eating and Activity Guidelines for Adults. Health professionals (usually GPs) can refer anyone who would benefit from increased physical activity to Green Prescription for support with improving strength, stability, fitness, nutrition or weight loss. It is a three month programme that includes face-to-face and phone support. ADHB/WDHB now includes pregnant women and women of childbearing age as priority groups.

- **Green Prescription Active Families** is a Ministry funded nutrition and physical activity programme for families. It has been provided in Waitemata DHB and CM Health for several years, and more recently in Auckland DHB. The programme is available via self-referral, or referral from any health professional (usually a GP or Paediatrician). The programme runs for up to 12 months, and is available to children and youth aged five to 18 years, and their families, with priority given to children aged five to 12 years. The most recent national monitoring report for the programme year 2015 showed that 85% of families surveyed noticed positive changes in their child's health and/or fitness, and 6% did not. Of those that noticed changes, 44 % said that

their child had lost weight. Measured changes in weight or BMI were not assessed.(24) CM health/WDHB/ADHB have recently made contractual changes including identifying Māori and Pacific families as priority groups, including parenting skills into the programme content and BMI recording as part of outcome measures.

- **Healthy Village Action Zones (Auckland DHB), Enua Ola (Waitemata DHB) and LotuMoui (CM Health)** are Pacific community church-based programme that support Pacific communities to create and lead healthy lifestyles. The programmes in Auckland DHB and Waitemata DHB include the eight week adult Aiga weight loss challenge to encourage community engagement and support healthy choices in order to improve health, and reduce overweight and obesity rates within Pacific communities.

- **Health Promoting Schools (HPS)** is a national approach funded by Ministry of Health. It is an education settings approach and is a community-led development initiative which focuses on the health and wellbeing of the school communities. The purpose of HPS is to support schools identify and address barriers to learning and enable improving student achievement. Schools include health and wellbeing in their planning, review processes, teaching strategies, curriculum and assessment activities. Health Promoting Schools facilitators work with school leaders to create and implement an action plan to address their identified health and wellbeing priorities. HPS service provides school communities with links to appropriate health and social services. HPS prioritises decile 1-4 (year 1-8) schools and schools with high Māori/Pacific population (year 1-8). In 2016/2017 CM Health had 107 target schools. Out of 107 schools, 81 are engaged with HPS (have completed the rubric) initiative. There are 50 decile 1-4 schools across Waitemata DHB and 60 across Auckland DHB).

- **Auckland Regional Dental Service** (ARDS) provides a range of oral health services that contribute to an improvement in the oral health status of the DHB's population. The service is available for children until the end of school year eight. The service provided includes: preventative care, oral health promotion and education, diagnostic services, treatment of oral disease and restoration of tooth tissue. There are similarities in health promotion messaging for oral health and childhood unhealthy weight, and therefore collaborative opportunities for ARDS and the northern region DHBs to develop consistent health promotion messages. Dental care for adolescents is provided by contracted dental providers. We need to work with ARDS and the northern region DHBs to develop consistent health promotion messages for obesity and oral health.

- **The University of Auckland** is a partner in the HAT coalition and is working collaboratively with and the metro-Auckland DHBs to collect data on the food environment in and around ECEs / Kohanga reo, schools and the DHBs. The majority of this research stems from the International Network for Food and Obesity/NCDs Research, Monitoring and Action Support (INFORMAS), which is coordinated by the School of Population Health. The University also runs a Dietetic Training Programme, designed to provide the postgraduate training required to enable graduates to practise as Dietitians in New Zealand. As part of the training programme the University offers a teaching clinic where the whānau of children identified as obese at their B4SC

can receive free advice on nutrition and physical activity. Research opportunities are also available for University of Auckland students within Waitemata, Counties and Auckland DHBs.

- **Treaty Partners:**

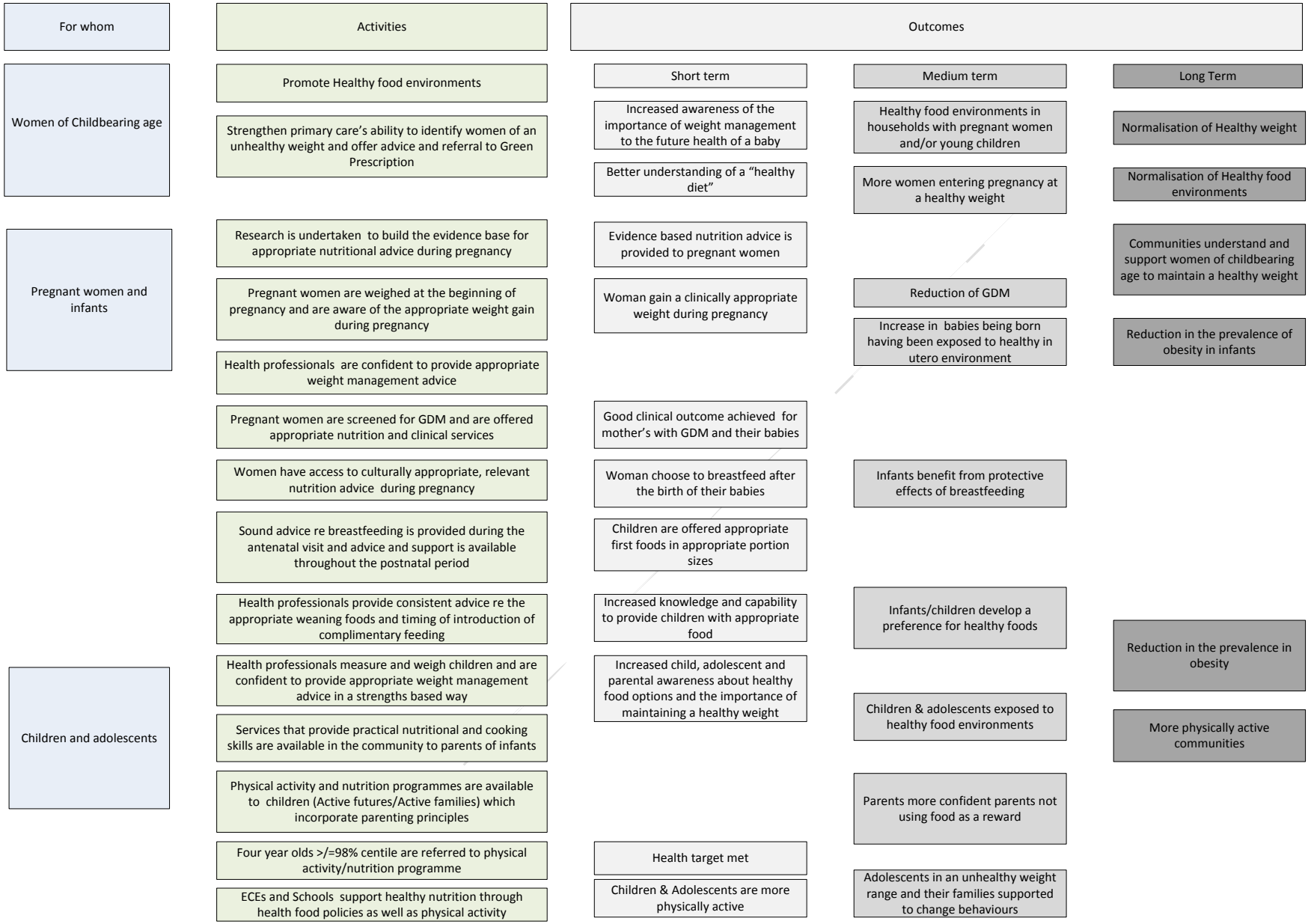
  Auckland DHB has a Memorandum of Understanding (MoU) with Te Rūnanga o Ngāti Whātua. Te Rūnanga o Ngāti Whātua has strong links with Māori communities across Auckland City and represents the aspirations of these communities. Te Rūnanga o Ngāti Whātua has contributed to the content of the Auckland District Māori Health Plan and will be key to partnering with the DHB to engage key stakeholders for increased Māori health gain.

  Waitemata DHB has Memorandum of Understanding (MoU) with partners, Te Rūnanga o Ngāti Whātua and Te Whānau o Waipareira Trust. Both partners have strong links with Māori communities. Te Whānau o Waipereira Trust has strong links with whānau in West Auckland and Te Rūnanga o Ngāti Whātua has strong links across Waitemata DHB, particularly in the South Kaipara area. Te Rūnanga o Ngāti Whātua and Te Whānau o Waipareira Trust have contributed to the content of the Waitemata District Māori Health Plan and will be key to partnering with the DHB to engage key stakeholders for increased Māori health gain.

  CM Health is committed to reducing health inequalities, accelerating Māori health gain and progressing the principles of the Treaty of Waitangi. The opportunity and challenge of Māori health outcome improvement is one shared with Treaty partner, Manawhenua I Tamaki Makaurau. This is an important partnership relationship for CM Health and integral to moving forward in-step with the local hapu, iwi and Māori communities.

  This plan supports the relationship interests of the metro-Auckland DHBs and Treaty partners, who are focused on addressing health inequalities and accelerating the health interests of Māori in this District.

Figure 4: Child healthy weight programme logic: we are committed to addressing unhealthy weight by taking a life-course approach with a focus on achieving equality in health outcomes



Appendix 1: Evidence for Actions

1. Women of childbearing age

Issue and Rationale for action

Scientific research confirms that the influences that alter risk of high BMI in childhood begin even prior to conception and persist throughout growth and development into adulthood.

Biological risk factors that can occur prior to conception include whether the mother to be experiences over or under-nutrition, is obese, or experiences stress before and during pregnancy. As many pregnancies are unplanned it is important that the population as a whole is of a healthy weight. This will offer an individual personal health benefits as well as protect future children. Emerging evidence suggests that paternal weight may also influence future obesity risk.(16)

Contextual and wider societal factors such as the obesogenic environment with promotion of energy-dense and nutrient poor food, limitations on safe and accessible physical activity, reduced task based mobility and active transport can make opportunities to eat healthily and exercise more difficult for individuals and society as a whole. Individuals behavioural responses in the context of a challenging environment alongside biological influences will determine their weight trajectory over their life course.(16, 18) Actions must address both the environment and support the individual.

Current Situation

Primary care practitioners and the DHBs are both involved in efforts to support overweight and obese adults to lose weight and maintain their weight loss. These efforts include:

- The Aiga Weight Loss Challenge
- Referrals to Green Prescription providers from primary care
- DHB-based chronic conditions management services.

There are currently several approaches influencing the community and environments people live in that the DHB is actively involved with, including the Pacific community church-based programme Healthy Village Action Zones (HVAZ; Auckland DHB), Enua Ola (Waitemata DHB) and LotuMoui (CM Health), the community development initiative Healthy Families NZ and the regional Healthy Auckland Together (HAT) coalition to promote environmental change that increases physical activity, improves nutrition and reduces unhealthy weight. In addition the Ministry of Health (MoH) funds a range of health promotion services in Auckland that promote healthy eating and physical activity with the goals of promoting and supporting healthy lifestyles and wellbeing, and through this, reducing childhood obesity.

The DHBs, together with the Auckland Regional Public Health Service (ARPHS), the Ministry of Health (MoH) and other organisations have developed and are implementing a National

Healthy Food and Drink Policy. This policy will be strengthened in collaboration with the National Food and Drink Environments Network.

What do we know about what works?

Evidence	**Relevance to the plan**
Improving built environment	
Environmental interventions that support healthy nutrition and activity choices are needed to support healthy weight within populations.(16)	Support HAT in addressing the built environment.
Food policies	
Food policies work through enabling healthy preference learning, removing barriers to healthy preference choice, supporting reassessment of unhealthy preferences and stimulating a positive food-systems response.(25)	DHB Food and Drink Policy implementation; support HAT in advocacy; support MoH-funded NGOs which encourage and support policy change and implementation in settings such as schools, ECEs, churches and other community settings; support in policy submissions relating to the food system and nutrition.
Community-led approaches	
Community engagement and mobilisation to effect policy and systems changes are important in supporting healthy environments and addressing high BMI at a population level.(26)	Support Healthy Families NZ and look at ways to promote and promulgate successful strategies.
Workplace health	
Adults spend approximately one third of their lives in the workplace; poor employee health can cost organisations through absenteeism, poor productivity and lower retention.(27)	Support HAT; Support Healthy Families NZ; and DHB workplace wellness initiatives.
Pre-conception health	
Children of women with prenatal obesity are two-four times more likely to be overweight in later childhood.(28)	Promote national guidelines and support DHB adult weight management pathway; promote Green Prescription referrals.

MoH Childhood Obesity Plan activities

Health-led initiatives within the MoH Childhood Obesity Plan, which incorporate the pre-conception period for youth and women of childbearing age and require DHB action include:

- Supporting the Healthy Families NZ initiative
- Implementing the National DHB Healthy Food and Drink Policy
- Aligning public health and clinical advice with the updated MoH Eating and Activity Guidelines.

2. Pregnant women and infants

Issue and Rationale for action

We know that the risk of obesity can be passed from parents to children. This transference of risk is assumed to be both due to the biological influences we inherit from our parents and the way family life shapes behaviours that children adopt as they grow into adulthood.

Parents can shape future behaviours through the eating and physical activity behaviours they adopt for their families and these can persist across generations due to socioeconomic conditions and cultural traditions and behaviours.

Biological factors can alter risk through two proposed developmental pathways. The first of these, more common in developing countries, results from malnutrition or fetal growth restriction in the antenatal period and early child development due to poor maternal nutrition amongst other factors.

Susceptibility is influenced by epigenetic processes, where environmental influences, in this case malnutrition, alter the way genes function. These epigenetic effects do not necessarily change objective measures such as birth weight. Babies who have experienced under nutrition and were born with low birth weight, or who are short-for-age, are at far greater risk of developing overweight and obesity later in life when faced with the obesogenic environment that is the norm for our society.(16, 29) The second well described developmental pathway is characterised by mothers who begin pregnancy already obese or suffering from diabetes, or whom develop gestational diabetes mellitus (GDM). These maternal conditions predispose the child to develop increased fat deposits which are associated with future metabolic disease and obesity. It is hypothesised that epigenetic effects further modulate this risk.(16)

The way that children are fed early in life will further influence their risk of developing obesity and the balance of evidence suggests breastfeeding confers some protection against obesity and that there is a dose-response effect.(28, 30-33) The World Health Organisation (WHO) Commission on Ending Childhood Obesity reinforces that “Breastfeeding is core to optimizing infant development, growth and nutrition and may also be beneficial for postnatal weight management in women”. Summaries of the evidence suggest a number of ways that the diet of a mother and the type of feeding and complementary foods given to an infant can influence the child’s preferences:(16)

- The flavours of foods that mothers eat can be passed on both in-utero and when breastfeeding and these can influence a child's future taste preferences.
- Children who are formula fed have more difficulty initially accepting flavours of fruits and vegetables and some children to bitter tastes.
- Infants tend to be more accepting of the flavours of the foods eaten by their mother during pregnancy and lactation when they are first exposed to foods. It has been identified that in general infants prefer sweet and salt tastes and dislike bitter tastes.
- Repeated exposures (tasting of food) for fruits, vegetables and other healthy foods influences infants to prefer these, by experience of a variety of such foods and then parental and social modelling; and those fed a variety of fruits or vegetables were more accepting when novel ones were introduced.
- Children are more likely to eat new foods if they are eating the same thing as their parent.

Maternal diet is important for the on-going health of the mother, their risk of obesity and/or unhealthy pregnancy weight gain and can influence a child's future taste preferences. Data from New Zealand has shown that poorer dietary patterns are associated with mothers-to-be being born in New Zealand, of Pacific or Māori ethnicity, younger maternal age and lower educational levels and are associated with other unhealthy behaviours including smoking and alcohol consumption in pregnancy and not taking appropriate folic acid supplementation. This suggests a clear need for additional support for these populations and the coordination of dietary advice alongside antenatal care more broadly.(34)

It is apparent from this evidence that interventions before and early on in conception and in infant feeding, may offer opportunities to modulate risk. Other influences on risk of obesity will also be important. The WHO Commission point to a recent meta-analysis which demonstrated that maternal smoking during pregnancy was associated with higher odds or chance of a child developing obesity (OR 1.6; 95% CI: 1.37–1.88). This reinforces the importance of maintaining current efforts across women and children's health to improve obesity and other health indicators.(16)

Current Situation

The MoH Guidance for Healthy Weight Gain in Pregnancy was released in 2014, and is being adopted and used across primary care providers, including General Practitioners (GP)s, Lead Maternity Carers (LMC)s and within Healthy Babies Healthy Futures (HBHF). It is not known if adoption is consistent across all providers. GDM guidelines have also been implemented across the metro Auckland DHBs. General Practitioners and LMCs can currently refer pregnant women to Green Prescription, however, Green Prescription providers may need further upskilling on supporting pregnant women at risk of GDM as this is perceived to currently not be a common referral.CM Health has not managed to get traction with Green Prescription to deliver a programme specifically for pregnant women but this is described in the action plan.

The HBHF programme has been in place since 2014 in Auckland DHB /Waitemata DHB. This community-based obesity prevention and reduction programme is aimed at improving maternal and infant nutrition and physical activity for Māori, Pacific and Asian pregnant women and their families. The programme has been well received by women, and has received MoH funding for a further year, from 2017 - 2018. It utilises a community development approach, and involves an innovative text-based health information component. HBHF is being evaluated by an external evaluator to determine reach and impact.

Te Rito Ora, a free community based service that provides breastfeeding and baby feeding support for mothers and babies who live in Counties Manukau, has been in place since mid-2015. Te Rito Ora has received MoH funding for a further year, from 2017 – 2018. The programme is being evaluated by an external evaluator to determine reach and impact.

All DHBs are part of the Baby Friendly Hospital Initiative (BFHI). Breastfeeding rates differ by ethnicity, but are high on discharge from hospital (above the BFHI target of 75%), and then drop significantly by six weeks postnatal and again even further at three months. For women who experience complex breastfeeding problems Lactation Consultant (LC) support is available while they are in hospital. Waitemata DHB also provides outpatient LC support four days a week across Waitakere and North Shore sites. Auckland DHB implemented community LC support in 2016, consisting of clinics co-located with midwifery and Well Child providers, and a home visiting service. Te Rito Ora provides community based LC support for women in Counties Manukau and there is also lactation Consultant support available through Turuki Heath Care B4Baby programme.

Whilst LC support is acknowledged as being critical for women experiencing complex breastfeeding problems all women have access to services for breastfeeding support, through their LMC and the Well Child Nurse service. The uptake of this advice amongst new mothers is however unclear and the quality and consistency of such advice may differ.

Consistent training and advice is needed across community, primary and secondary care settings regarding breastfeeding and first foods, and increased breastfeeding advice and support for women in pregnancy and postnatal is required across the region.

What do we know about what works?

Evidence	**Relevance to the plan**
Gestational Diabetes Mellitus (GDM)	
Antenatal and pregnancy nutrition and lifestyle interventions in obese and normal weight pregnant women, particularly dietary interventions, reduce weight gain in pregnancy, prevent excessive weight gain in pregnancy, and may reduce the prevalence of GDM.(35-37) Studies have primarily looked at maternal health and birth outcomes and it is noted that most studies have not had as a specified outcome of interest childhood obesity. The WHO Commission notes that observational data suggests that interventions targeting weight gain in pregnancy and glycaemic control are likely to be effective and note that interventions prior to conception will add additional benefit.(16)	Promote Healthy Weight Gain guidelines; implement GDM pathway; support HBHF.

Evidence	Relevance to the plan
Physical activity in pregnancy	
Physical activity during pregnancy and the postpartum period is beneficial for maternal and fetal health, is not associated with risks for the new-born and may lead to improvements in lifestyle that confer long-term benefit.(38)	Promote Healthy Weight Gain guidelines; promote Green Prescription referrals for pregnant women; support HBHF.
Breastfeeding	
Data from observational studies indicates that breastfeeding anytime in the first year of life provides moderate protection for childhood obesity, and may reduce the odds of childhood overweight by 15-22 %.(28) In a large interventional study of breastfed infants, follow-up at 11.5 years found no significant difference in Body Mass Index (BMI) between breastfed infants in study sites compared to control sites though the intervention had clearly increased breastfeeding duration, exclusive breastfeeding, and overall prevalence during the first year of life.(39) This suggests that this intervention alone would not likely prevent childhood obesity but should be undertaken in concert with other activities.	Suite of DHB initiatives to promote breastfeeding
Baby friendly Hospital Initiatives (BFHI) have the highest impact on promoting any breastfeeding (RR 1.66 95% CI 1.34-2.07) and are effective in initiating breastfeeding but other interventions are required to promote exclusive breastfeeding to 6 months of age and continued breastfeeding past 6 months of age.	
Breastfeeding interventions are most effective at supporting exclusive breastfeeding, and continued breastfeeding when provided concurrently in a combination of settings including health, home, family and community settings.(40)	
Pooled results from trials across low and middle income countries (LMIC) and high income countries (HIC) show that group counselling in the community (RR 1.65, 95% CI 1.38–1.97), BFHI support (RR 1.20, 95% CI 1.11–1.28), and counselling or education by health staff delivered in multiple settings had the largest effects on breastfeeding initiation in the first hour.(40)	
Pooled results from trials across LMIC and HIC interventions delivered in the health system or home and family environment have comparatively greater impact on maintaining exclusive breastfeeding[4] than those delivered solely in the community but interventions improve significantly by 79% (RR 1.79 95% CI 1.45-2.21) when interventions are delivered concurrently in any combination of settings (across healthcare, home and community settings). Education or counselling has the greatest impact on promoting exclusive breastfeeding. Where this is undertaken in the health system and community this is likely to be the most powerful. However some studies in developed (HIC) countries have not demonstrated a statistically significant	

[4] Defined as feeding with breast milk up to 6 months of age and no other liquids or solids other than vitamin/mineral supplements or medications.

Evidence	Relevance to the plan
effect of breastfeeding education and interventions in general demonstrate lesser impact in HIC which could be due to better baseline levels of knowledge and understanding about breastfeeding.(40-42)	
Interventions in HIC show a greater effect on promoting continued breastfeeding[5] than pooled results. Counselling or education when given concurrently in any setting (across healthcare, home and community settings) significantly promoted continued breastfeeding (RR 1.97 95% CI 1.74-2.24).(40)	
There is mixed evidence on the utility of peer support programmes. Universal peer support programmes have not been found to improve breastfeeding but targeted programmes (for example for low income or specific ethnic groups) may be effective to reduce breastfeeding non-initiation (RR 0.64 95% CI 0.41 -0.99).(43) There is significant heterogeneity in study results and some studies have not been able to demonstrate a statistically significant effect in high income countries which suggest context and specific peer support programme design may significantly impact success.(43, 44)	
Introduction of solids	
Late introduction of first foods, provides moderate protection for childhood obesity.(28)	Support HBHF and Te Rito Ora.

MoH Childhood Obesity Plan activities

Health-led initiatives within the MoH Childhood Obesity Plan specifically for maternity and the first year of life that require DHB action include:

- Implementing the GDM guidelines
- Utilising the MoH Guidance for Healthy Weight Gain in Pregnancy resource
- Referring pregnant women with or at risk of GDM to Green Prescription

[5] Where breastfeeding persists greater than six and less than 23 months of age.

3. Children and Adolescents

Issue and Rationale for action

The prevention and treatment of childhood obesity requires that (1) supportive policies and health promoting environments are created and maintained across the different levels and sectors that influence healthy diets and healthy movement and (2) that individual level approaches work in concert with this to enable behaviour change for children, caregivers and families.

Interventions that focus on individual behaviour change can consequently focus on different groups such as pre-school or school aged children, adolescents or parents and caregivers and can be implemented in different settings, including childcare and schools, health care and the broader community. In considering potential interventions it is important to balance the evidence for different strategies with local knowledge that the community holds. In childhood obesity, where Māori and Pacific children bear an unequal burden of disease, it is essential that interventions be tailored to meet the needs of these communities and that there is opportunity to adapt in response to the communities perspectives.

The WHO report into Population-based Approaches to Childhood Obesity Prevention (2012)- confirmed that childcare services (such as Early Childhood Education Centres (ECEs) and Kohanga reo that provide educational and developmental activities for children prior to formal compulsory schooling) are an important setting for public health action to reduce the risk of overweight and obesity in childhood.(11) These settings, alongside schools, provide an opportunity to access large numbers of children for prolonged periods of time and because of this are influential in children's development and behaviours. They are also a conduit to parents and caregivers and the home environment.(11)

More recently, the WHO Report of the Commission on Ending Childhood Obesity (2016) made specific recommendations for child-care and school environments ((19):

Child-care environments:

1.8 Require settings such as schools, child-care settings, children's sports facilities and events to create healthy food environments.

4.9 Ensure only healthy foods, beverages and snacks are served in formal child care settings or institutions

4.10 Ensure food education and understanding are incorporated into the curriculum in formal child-care settings or institutions

4.11 Ensure physical activity is incorporated into the daily routine and curriculum in formal child care settings or institutions.

School environments:

2.2 Ensure that adequate facilities are available on school premises and in public spaces for physical activity during recreational time for all children (including those with disabilities), with the provision of gender-friendly spaces where appropriate.

5.1 Establish standards for meals provided in schools, or foods and beverages sold in schools, that meet healthy nutrition guidelines.

5.2 Eliminate the provision or sale of unhealthy foods, such as sugar-sweetened beverages and energy-dense, nutrient-poor foods, in the school environment.

5.3 Ensure access to potable water in schools and sports facilities.

5.4 Require inclusion of nutrition and health education within the core curriculum of schools.

5.5 Improve the nutrition literacy and skills of parents and caregivers.

5.6 Make food preparation classes available to children, their parents and caregivers.

5.7 Include Quality Physical Education in the school curriculum and provide adequate and appropriate staffing and facilities to support this.

Assessment of weight outcomes vary between studies and potential measures of body weight reported can include BMI, BMI Z-score[6], BMI percentile and weight. It is important to note that due to children's normal growth, BMI and weight may increase even as children's growth trajectory shifts as indicated by change in BMI z-score.

It is unlikely that a single intervention at any time point in a child's life would be sufficient to sustain a healthy weight. While environmental drivers towards overweight and obesity persist, and are heavily weighted to promote excess energy consumption and inadequate physical activity, children "may need to be exposed to a coherent sequence of age-appropriate interventions in order to achieve and maintain a healthy weight".(16)

Current Situation

All DHBs provide the Green Prescription Active Families family-based nutrition and physical activity programme for children aged 5-18 years. Green Prescription Active Families is delivered in Auckland, on the North Shore and in Waitakere. In Counties Manukau, Active Families has been predominately delivered in Otara historically. However with the development of new Active Futures programme, both programmes will be providing services in Otara, Mangere as well as further south in Maurewa-Papakura.

Currently the Green Prescription Active Families family-based nutrition and physical activity programme does not include four year olds in Auckland and Waitemata. With the initiation of the new MoH 'raising healthy kids' target this has been identified as an area of need.

[6] "A BMI z score or standard deviation score indicates how many units (of the standard deviation) a child's BMI is above or below the average BMI value for their age group and sex. For instance, a z score of 1.5 indicates that a child' is 1.5 standard deviations above the average value, and a z score of -1.5 indicates a child is 1.5 standard deviations below the average value". National
68. Obesity Observatory on behalf of the Public Health Observatories in England A simple guide to classifying body mass index in children. 2011.

Children identified in the B4SC may benefit from such programmes and health care practitioners will require appropriate referral pathways to be identified. As part of the MoH target the MoH is providing funding for the expansion of community physical activity and nutrition programmes to pre-schoolers in ADHB/WDHB from July 2017.

Four year old children are assessed for unhealthy weight at the B4SC. Children identified as obese are referred to an appropriate health care practitioner – typically their family GP. The *Clinical Guidance for Weight Management in New Zealand Children and Young People* provides GPs with some information on subsequent management. A localised childhood healthy weight pathway has been development to support Well Child Tamariki Ora (WCTO), B4SC and GP providers to ensure children identified as being overweight or obese receive appropriate evidence-based care. The assessment and management of children with high BMI will be further supported through appropriate resources for brief intervention. A goal setting tool (Be Smarter) has been identified as the best available resource for community and primary care providers to enable them to provide evidence-based and consistent advice to families, and consistent reinforcement of this advice across different settings and services.

As of June 2017 there are 1430 ECEs (49 are Te Kōhanga Reo and 562 schools in the broader Auckland region.(45, 46)) Children may be physically active in ECEs and school, through activities such as sport or active play, or through everyday tasks such as getting to and from school. In the Auckland region approximately 45% of children aged 2–14 years usually use active transport to get to and from school.(47)

Although children are considered by educators and parents to be naturally active and energetic, children have been found to be sedentary the majority of the time while in ECE care. Contributing factors include lack of space, the large majority of ECEs not having a written physical activity policy and many not offering structured physical activity.(48) For secondary students, of those surveyed (n=8,500) only 10% (14% males and 6% females) met the current New Zealand physical activity recommendation of 60 minutes per day.(49) The Metro-Auckland DHBs encourage the implementation of the MoH *Active Play Guidelines for Under-Fives*, which are consistent with the *Clinical Weight Management Guidelines for Children and Young People*, Sport New Zealand's *Physical Literacy Approach and Principles of Play,* and the Ministry of Education's *Te Whāriki: Early childhood education curriculum*.(50) For older children the Metro-Auckland DHBs endorse the use of the MoH *Physical Activity Guidelines for Children and Young People (5-17 years)(51).*

Nutrition in ECEs and schools is variable. The University of Auckland INFORMAS research group is currently conducting research to determine the number and quality of school nutrition policies in New Zealand. The metro-Auckland DHBs are supporting this work. For ECEs, University of Auckland research demonstrates that whilst a high proportion of ECEs (82%) have a nutrition policy the policies are insufficient in measures of comprehensiveness and strength.(52) Only 5% of ECEs that provided food daily (over 50% of ECEs), provide food that is of sufficient quantity, variety and quality to meet half of a pre-schooler's nutritional needs using government guidelines. Occasional foods were included in half of weekly menus, although they should only be provided once a term.(53)

The Ministry of Education's promoting healthy lifestyles web page has resources for schools including a template for formulating a 'water-only' policy, a link to healthy confident kids guidelines and the food and beverage classification system.(54) There are also guidelines on the Ministry of Education's website for schools to develop policies related to the food environment in their school.(55) The Ministry of Education suggests that schools have a water and milk only approach to beverages. In 2016, this was implemented in 69% of primary schools, but only 13% of secondary schools.(56) The impact of the Food Act needs to be considered in further research of food provision in ECEs and schools.

The environments outside of schools and where children live can also influence nutrition, especially where high energy and nutrient poor food choices predominate. Across the Auckland region there were on average 2.5 fast-food restaurants within 10 minutes' walk of a primary, intermediate or secondary school. Within lower decile neighbourhoods it may be easier to obtain fast food than to visit a grocery store with a gradient of increasing likelihood of excess fast food premises (defined as having access to more fast food premises than grocers) as neighbourhood deprivation increases.(57)

What do we know about what works?

Evidence	**Relevance to the plan**
Environments	
School food environment policies are effective at supporting healthy weight in children.(58)	Support HAT; engage with primary schools and ECEs through Healthy Families NZ and Heart Foundation, school based health services; continue engagement and support through the Health Promoting Schools initiative.
Health promotion	
Cost effective interventions for children to prevent or manage high BMI include: reducing junk food advertising, education programmes to reduce sugar sweetened drink consumption, multifaceted programmes including nutrition and physical activity, education programmes to reduce television viewing and family-targeted programmes.(59)	Support HAT; support Healthy Families NZ.
Obesity prevention	
Evidence suggests child obesity prevention programmes are effective in reducing BMI z-scores and BMI. The age group in which efficacy has been most clearly demonstrated is age 6-12 years and interventions were predominantly based on behaviour change theories and implemented in education settings. Results from a Cochrane review of 55 studies found that children in	

Evidence	Relevance to the plan
the intervention group had a standardised mean difference in adiposity (measured as BMI or zBMI) of -0.15kg/m2 (95% CI -0.21 to -0.09).(58) Whilst these are small in terms of actual change in BMI, at a population level it is anticipated that these small changes are likely to be significant. Interventions are heterogeneous and there is no clear indication for any distinct intervention type or specific programme, particularly given limited evidence in the New Zealand context and with indigenous populations in general.(60) Consequently we can, at best elucidate some consistent principles for intervention delivery which are evidence based. The Cochrane review identifies the following components as important to effective interventions: • school curriculum that includes healthy eating, physical activity and body image; • increased sessions for physical activity and the development of fundamental movement skills throughout the school week; • improvements in nutritional quality of the food supply in schools; • environments and cultural practices that support children eating healthier foods and being active throughout each day; • support for teachers and other staff to implement health promotion strategies and activities (e.g. professional development, capacity building activities); and • parent support and home activities that encourage children to be more active, eat more nutritious foods and spend less time in screen based activities.(58) As the majority of studies have not undertaken long-term follow-up it is unclear to what degree reductions in BMI or BMI z-score are sustained over time.	
Waters et al. in the Cochrane review further examined studies in the 0-5 years age range, comparing those conducted in, or outside of, educational settings. They observed that effects were greater outside of educational settings (e.g. in home or health-care settings). This may have been due to greater parental involvement in these settings and that effects were observed more consistently for children from less advantaged backgrounds.(58) In a systematic review of nine community-based interventions there was moderately strong evidence that inclusion of a school component was effective for prevention of child overweight and obesity, in that 2 of the 3 studies that involved schools found a statistically significant benefit. Evidence was insufficient to draw any conclusions about the other community based approaches that worked in the community alone or community and other non-educational settings.(61)	
Obesity treatment	

Evidence	Relevance to the plan
Obesity treatment studies have used a variety of interventions including lifestyle programmes and medication.	
A Cochrane systematic review and meta-analysis of multi-component obesity treatment programmes in 0-6 year olds found a reduction in BMI z-score in the intervention groups compared with controls at the end of intervention: mean difference -0.26 units (95% CI -0.37 to -0.16); P < 0.00001; this was sustained at 12-18 months where the mean difference was -0.38 units (95% CI -0.58 to -0.19); P = 0.0001; and in one trial which reported outcomes at 24 months of follow-up (12 months' post intervention) and found the benefit was maintained (mean difference -0.25 units (95% CI -0.40 to -0.10). Studies are heterogeneous and consequently this result should be interpreted with caution, for example one large study included in this meta-analysis assessed a dairy rich diet traditional to a specific region and this would impact its generalisability.(62)	Develop and request proposals for a new family based intervention for pre-schoolers. The development of this initiative will incorporate MoH requirements alongside other evidence-based criteria.
Luttikhuis et al reviewed 54 lifestyle interventions including physical activity, diet or behavioural interventions. Of these 54 studies 37 were conducted in children <12 years and 17 studies included adolescents >12 years of age. For children <12 years they found a mean change in BMI z-score at twelve months follow up of -0.04 [95% CI -0.12, 0.04] with lifestyle interventions. For children >12 years they found a mean change in BMI z-score at twelve months follow up of -0.14 [95% CI -0.18, -0.10] with lifestyle interventions. They concluded "while there is limited quality data to recommend one treatment program to be favoured over another, this review shows that combined behavioural lifestyle interventions compared to standard care or self-help can produce a significant and clinically meaningful reduction in overweight in children and adolescents."(63)	Promote and expand access to an Active Families type programme for children and adolescents. Assess and make recommendations on delivery of a multi-component intervention addressing diet, activity and behaviours. Programme will involve parents and the family unit in parenting skills (e.g. sleep hygiene, fussy eating, screen time) and long term behaviour change.
The following features have been identified in the literature as characteristics of more effective interventions: • A multicomponent programme which addresses diet, physical activity and behaviours including decreased sedentary behaviours.(63, 64) • Parental and family involvement (particularly for pre-adolescent children) to support whole-of-family lifestyle change.(63, 65) • Management of obesity-associated comorbidities; and • Strategies to support long-term behavioural change.	Active Families type programme should provide a multi-component and family-focused intervention as described above. A new pre-school programme will operate on referral

Evidence	Relevance to the plan
	from B4SC or primary care. Children will receive a check-up with their GP for obesity related co-morbidities prior to referral.
In obesity prevention studies and obesity treatment studies the overall change in BMI has been small. (58, 63, 64)There are differing opinions on the clinical significance of this change in BMI. A recent meta-analysis showed that lifestyle interventions for children that achieved a reduction in BMI z-score of -0.1 led to significant improvements in low-density lipoprotein cholesterol, triglycerides, fasting insulin and blood pressure up to 1 year from baseline, which should lead to follow-on improvements in cardiovascular and metabolic outcomes.(64)	
Comprehensive childhood obesity prevention or treatment programmes should aim to increase participation in the following behaviours: moderate-to-vigorous physical activity, light/incidental physical activity, outdoor time, and good sleep hygiene, while discouraging extended sedentary behaviours.(16)	
Studies, including meta-analyses, show that the reductions in BMI z-score for children receiving intervention programmes were greater than the BMI z-score reductions achieved in adolescent study populations.(58, 64, 66)	Important to balance having programmes that span all age groups with focussing efforts where most gains are anticipated – in the early years of life, pre-school and early school years. This will be integrated into referral pathways and guidance for health care professionals.
A multi-centre audit of existing obesity interventions in New Zealand children (motivational interviewing, multidisciplinary teams or family-based nutrition and physical activity programmes) identified that all of these led to a significant reduction in BMI z-score. There were no statistically significant difference in measures of adiposity between the groups and consequently no insights as to the relative merits of one intervention over another can be gained.(66)	
Ongoing reinforcement is required to enable longer term effectiveness of BMI changes from motivational interviewing.(67)	Support brief interventions and on-going growth monitoring and

Evidence	Relevance to the plan
	follow-up in primary care.
In reviews of evidence for overweight and/or obese children aged 5 to 11 years, where parent only interventions have been considered for weight management it has been found that, for the primary outcome of changes in BMI, when trials compare a parent-only intervention with a parent-child intervention there were no substantial differences in BMI measures at either the post intervention follow-up or the longest follow-up period. There were no substantial effects of parent-only interventions on BMI or weight when compared with minimal contact control interventions[7]. In trials comparing a parent-only intervention with a waiting list control, there was a treatment effect on BMI in favour of the parent-only intervention at the post intervention follow-up and at the longest follow-up period but generally this was considered to be low quality evidence and further studies are recommended.(68) Overall parent-only interventions may be an effective treatment option for overweight and/or obese children aged 5 to 11 years when compared with waiting list controls. Parent-only interventions had similar effects compared with parent-child interventions and compared with those with minimal contact controls. However, the evidence is at present limited.	Parent-only interventions are no more effective than parent-child interventions. As existing interventions involve parents and children strengthening and expanding these initiatives is a preferred option.
In meta-analyses of weight loss drug trials, both orlistat and sibutramine, as an adjunct to a lifestyle intervention, led to significant improvements in adiposity in adolescents. It is important to note however that there were significant adverse events associated.(63)	Any potential drug therapy should be undertaken on a case by case basis when under care of an appropriately qualified physician.
There is currently insufficient evidence to determine whether bariatric surgery is an appropriate weight management strategy for adolescents. It will be important to closely monitor adverse outcomes and assess psycho-social indices alongside BMI and metabolic markers for this group to determine treatment safety and efficacy.(69)	Further evidence reviews will inform ongoing consideration of whether there is any role for bariatric surgery in adolescents.

MoH Childhood Obesity Plan activities

Health-led initiatives within the MoH Childhood Obesity Plan specifically for children that require DHB action include:

- Ensuring the new health target is met:

[7] Defined as mailed information or a workbook or minimal sessions.

By December 2017, 95 per cent of obese children identified in the B4SC programme will be referred to a health professional for clinical assessment and family-based nutrition, activity and lifestyle interventions.

- Improving access for four year olds to nutrition and physical activity programmes
- Utilising the MoH *Clinical Guidance for Weight Management in New Zealand Children and Young People*
- Utilising the updated MoH *Active Play Guidelines for Under-Fives*
- Providing Health Promoting Schools support

Appendix 2: Stocktake

A stocktake has been undertaken of DHB, NGO and community physical activity and nutrition activities for children and their families within the metro Auckland DHBs. To date it has revealed a gap with no family-based combined nutrition and physical activity programmes available in Auckland DHB or Waitemata DHB for pre-schoolers identified as obese or overweight at the B4SC with a programme having just recently been commissioned in CM Health

The major initiative that has been available across the is Auckland region has been the Green Prescription Active Families programme, which in 2016/17 was funded for 114 children per year in Auckland DHB, 117 children per year in Waitemata DHB and 171 children per year in CM Health. The Active Families programme is designed for children aged 5-18 years and in its existing format is not designed to meet the needs of pre-school children.

Table 7. Stocktake of community physical activity and nutrition activities for children and their families in Auckland DHB – December 2016

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
Health Promoting Schools (HPS)	ADHB: Michelle Hull (Health Promotion Schools Coordinator – Starship Community) michellehull@adhb.govt.nz; 021 832 338 / 639 0200 ext: 29169	Ministry of Health (MoH)	Facilitators approach schools or schools self-refer	Year 1-8 in decile 1-4 schools and those with high Māori and Pacifika rolls.	HPS facilitators work with school leaders who provide leadership for their whole school community to identify health and wellbeing priorities for their students, and create and implement an action plan to address these priorities and monitor outcomes	http://hps.tki.org.nz/
Fruit in Schools (FiS)	info@unitedfresh.co.nz; (09)4805057	MoH; United Fresh Incorporated	None	Primary and intermediate school aged children, decile 1-2 schools	Initiative provides one piece of fresh produce, fruit or vegetable, to school children daily.	http://www.unitedfresh.co.nz/our-work/fruit-in-schools and http://www.health.govt.nz/our-work/life-stages/child-health/fruit-schools-programme
Fonterra Milk for Schools	Fonterra milk for schools; contact@fonterramilkforschools.com; 0800900070	Fonterra	None	Primary school aged children	Initiative provides milk (200ml tetrapack) to children in all primary schools who wish to take part.	https://www.fonterramilkforschools.com/
Kick Start Breakfast Programme	Kick.Start.Breakfast@fonterra.co.nz	Fonterra in conjunction with Sanitarium	Self-referral	Primary, intermediate and secondary school aged children, decile 1-10 schools	Programme providing children at school with a breakfast of Weetbix and milk.	https://kickstartbreakfast.co.nz/
Enviroschools	Anke Nieschmidt (Programme and Projects Coordinator); anke.nieschmidt@enviroschools.org.nz; (07)9597321 ext 30	Toimata Foundation	ECEs and schools can self-refer	Children who attend an ECE centre, primary, intermediate or secondary school.	The objective is to foster a generation of people who instinctively think and act sustainably through connecting with each other, their cultural identity and land, to create a healthier, peaceful, more equitable society. Facilitators provide ECEs and schools with support and resources.	http://www.enviroschools.org.nz/

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
Life Education Trust	Vicki Metekingi (Trusts Coordinator): Waitakere@lifeedtrust.org.nz; 0800 454 333	Life Education National Service Centre	Self-referral	Children at primary and intermediate school	The objective is to teach children about health, life, themselves, and other people, with the aim of showing them how to reach their full potential. Teachers go into schools and provide education sessions.	http://www.lifeeducation.org.nz/
Healthy Heart Award	http://www.learnbyheart.org.nz/index.php/contact-us	Heart Foundation (HF)	None	Children aged ≤5 years, who attend an ECE centre.	Bronze, silver, gold awards for ECEs. Programme assists ECEs to create an environment to promote physical activity and healthy eating to children and their families.	http://www.learnbyheart.org.nz/
Fuelled 4 Life	Sarah Goonan (Food & Beverage Classification System Programme Manager); fuelled4life@heartfoundation.org.nz	HF	None	ECEs: Children aged ≤5 years, who attend an ECE centre. Schools: primary, intermediate and secondary school aged children	Healthier foods recommended for use	http://www.fuelled4life.org.nz/
Food for Thought	Naomi Sutton (Nutritionist - Upper North Island); Naomi.Sutton@foodstuffs.co.nz; 0212208102	HF and Foodstuffs	Self-referral	Primary school aged children (years 5 & 6), HF delivers programme to decile 1-4 schools Foodstuffs nutritionist delivers programme to decile 5-10 schools	A nutrition education programme designed to assist the teaching of food and nutrition	http://www.foodforthought.co.nz/
Heart Start Award	http://www.learnbyheart.org.nz/index.php/contact-us	HF	Self-referral	Primary school aged children	Module-based programme for improving environments	http://www.learnbyheart.org.nz/

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
Heart Start Excellence Award	http://www.learnbyheart.org.nz/index.php/contact-us	HF	All schools with a MoE number can register on HF website	Primary school aged children	Module-based programme for improving environments	http://www.learnbyheart.org.nz/
Heart Schools Award	http://www.learnbyheart.org.nz/index.php/contact-us	HF	All schools with a MoE number can register on HF website	Primary school aged children	Exceptional school completes initiative for improving nutrition or PA environment. School completes up to 12 modules (minimum 5), including nutrition policy development, food service improvement, PA promotion and nutrition education for students and staff. 3 modules are from Food for Thought programme.	http://www.learnbyheart.org.nz/
Travelwise	Auckland Transport: 0800103080	Auckland Transport	Schools self-refer	Primary school aged children and the community	Programme focuses on road safety education and fun ways to get to school. Aim: to teach children to be safe and encourage active transport. (Programme includes seasonal cycling programmes and courses for all ages)	https://at.govt.nz/cycling-walking/school-travel/travelwise-schools/
Be Healthy, Be Active	Nestle Consumer Services; 0800 830 840	Nestle	Self-referral	Intermediate school aged children (10-13 years) and their teachers	Programme to raise awareness around good nutrition and active lifestyles for intermediate school aged children. Aligned with the NZ Curriculum for health and physical education.	https://www.behealthybeactive.co.nz/
Food for Kids (Orchards in Schools)	Kids Can; (09)4781525	KidsCan	Self-referral	Decile 3 and 4 primary schools enrolled in Kids Can partnership	Programme provides food at school for thousands of financially disadvantaged children every day.	https://www.kidscan.org.nz/our-work/food-for-kids

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
Garden to Table	Vivienne Campbell (Area Coordinator Northland)	Garden to Table Trust	None	Primary and secondary school aged children	School-based programme aimed at assisting children to create a sustainable garden, harvest fruits and vegetables, and cook and share a meal they have produced	http://www.gardentotable.org.nz/
Gardens for Health	Richard Main (Programme Manager): gardens@dpt.org.nz; (09)2739650	Diabetes Project Trust	Self-referral	Community groups, organisations, workplaces and schools	Programme provides support and advice to community groups or those looking to set up community gardens.	http://www.dpt.org.nz/our-programmes/garden-4-health
Maara Kai	tpk.tamaki-makaurau@tpk.govt.nz	Te Puni Kokiri	None	Community groups, e.g. marae, kōhanga reo, Kura, schools and Māori communities	Provides financial assistance to community groups wanting to set up sustainable community garden projects. small one-off funding grants of up to $2,000 (GST exclusive) are available to help community groups, such as marae, kōhanga reo, Kura, schools and Māori communities. Funding can be used for garden construction, gardening tools and compost, and education on gardening practices	https://www.tpk.govt.nz/_documents/tpk-maarakai-%20form2016.pdf
Nutrition and Dietetic Clinic	Julia Sekula (Clinical Director, Nutrition and Dietetic Clinic) j.sekula@auckland.ac.nz; (09)9237599	University of Auckland	GP/Health Professional or self-referral (note: self-referral is more expensive)	Children of all ages and their families	Student dietitians (5th year of the Masters) provide dietetic assessment and intervention, under the supervision of a NZ Registered Dietitian, for children of all ages and their families	http://www.clinics.auckland.ac.nz/en/about/our-services/nutrition-and-dietetic-clinic.html

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
Green Prescription Active Families	Active Families Co-ordinator Active Families Co-ordinator: http://www.health.govt.nz/our-work/preventative-health-wellness/physical-activity/green-prescriptions/active-families-contacts	Sport Auckland	GP/Health Professional or self-referral	Children aged 5-13 years, who are: overweight/obese; have poor eating habits; would benefit from being more active and have the support of whānau/family	Children attend regular group sessions (1hr/week for 6 months) with their family at a community centre. Group sessions include PA, parent workshops, and family cooking classes. Families are provided with monthly support from the coordinator towards lifestyle and wellbeing goals. Goals are set and child's progress monitored. Child linked to other activities in community.	http://www.sportauckland.org.nz/health-wellness/active-families
Steps for Life	info@stepsforlife.co.nz; (09)6343593	Monty Betham Steps For Life Foundation	Self-referral	Overweight secondary school aged children and their families	Programme (5-6hrs/week for 12 weeks) focuses on physical health, healthy food, mind health and healthy family. Includes physical activity sessions, nutrition advice and guided supermarket tour.	http://www.stepsforlife.co.nz/young-adults-programme
Healthy Babies, Healthy Futures TextMATCH	Pacific: Maria Kumitau (Programme Coordinator); maria.kumitau@thefono.org.nz; 021902571. Maori: Danielle Tahuri; danielle.tahuri@healthwest.co.nz. Asian: Fangfang Chen; fangfangchen@cnsst.org.nz South Asian: Anjileena; Anjileen@asiannetwork.org.nz	The Fono, HealthWest, CNSST, The Asian Network	GP, community group, maternity services or self-referral	Pregnant Māori, Pacific, Asian and South Asian women with children aged 0-4yrs and their families	A text message-based programme providing information on healthy eating and being active for pregnant women and new mothers	https://thefono.org/services-fees/community-services/healthy-babies-healthy-futures-programme/

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
Healthy Babies, Healthy Futures	Pacific: Maria Kumitau (Programme Coordinator); maria.kumitau@thefono.org.nz; 021902571 Maori: Danielle Tahuri; Danielle.tahuri@healthwest.co.nz; 02265708189 Asian: Fangfang Chen; fangfangchen@cnsst.org.nz or Bushra; Bushra@asiannetwork.org.nz; (09)8152338	The Fono, HealthWest, CNSST, The Asian Network	GP, maternity services, community group or self-referral	Pregnant Māori, Pacific, Asian and South Asian women with children aged 0-4yrs and their families	Programme (2hrs/week for 6 weeks) focused on providing Pacific mothers with advice and support for raising healthy, safe and happy children. Activities include: learning to cook healthy and affordable Pacific meals, learning about gardening and group exercise classes. Additional workshops, post-natal activity sessions and information about Pacific community events provided.	https://thefono.org/services-fees/community-services/healthy-babies-healthy-futures-programme/
FoodStorm	North Shore and Northcote: Karl & Kay Reyes (Regional Managers): karlkay@skids.co.nz; 02102597721 West Auckland: Lisa Walker (Regional Manager): west@skids.co.nz; 021819181 Epsom and Tamaki: Faieka Abrahams: faieka@skids.co.nz; 0272111279	sKids (Safe Kids in Daily Supervision)	sKids centres self-refer	Primary school aged children who attend sKids centres	Programme run from sKids before/after school care centres teaches children the fundamentals of healthy eating and cooking. Children learn to cook 12 essential recipes which have been developed to meet Heart Foundation guidelines.	http://www.skids.co.nz/foodstorm/

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
Greater Auckland Aquatic Action Plan (GAAAP)	Andrew Tara (Project Manager); andrew.tara@aktive.org.nz; 0220107428	Aktive-Auckland Sport & Rec, Water Safety NZ	Self-referral	Primary school aged children 7-10 years, decile 1-6 schools	Collaboration project that coordinates professionally delivered swimming lessons to primary school children. Children receive 8-10 free swim and survive lessons.	www.aktive.org.nz/Young-People/Greater-Auckland-Aquatic-Action-Plan-GAAAP.
PlayBall	Adam Brunt (Manager): manager@playball.co.nz; 021457571	PlayBall New Zealand	Self-referral	Children aged 3 months - 9 years	The main objectives are to improve basic movement, development and refining sport skills and techniques. Classes are held at ECEs, schools and community venues.	http://www.playball.co.nz/home
Get Set Go	Stephanie Cunningham (Manager): stephanie@athletics.org.nz; 021499529	Athletics NZ	Self-referral	School children aged 4-7 years	The objective of the programme is to teach children the fundamental movement and co-ordination skills required for any sport in a way that is structured and fun, for both children and adults. Get Set Go is also designed to provide teachers and coaches with the knowledge and skills they need to incorporate this into their lesson planning and coaching.	http://www.athletics.org.nz/Get-Involved/As-a-School/Get-Set-Go
Kai Auckland	Cissy Rock; Kaiauckland@gmail.com	Kai Auckland	Self-referral	Children all ages, who are overweight/obese, and their families	"People's food movement' offers a cohesive approach to creating connection an nourishment through food. Focuses on reducing systemic poverty, child hunger and social isolation, strengthening individual and community food security and increasing opportunities for volunteering in Auckland communities. Works in partnership with existing initiatives to influence the school setting and create a 'food movement'.	http://kaiauckland.org.nz/

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
Healthy Schools GetWize2Health (Diabetes Projects Trust)	Angela Tsang (Schools Coordinator): schools@dpt.org,nz; (09)2739650	Diabetes Project Trust	Self-referral	Teachers of secondary school students, and school nurses	Programme provides workshop training to teachers, school nurses, and others needing practical tools to help students make better choices around food and PA. Training is curriculum aligned and a comprehensive resource kits are provided. The Trust also supports canteens to improve the nutrition environment for students (e.g. tuckshop)	http://www.dpt.org.nz/our-programmes/healthy-school

Table 8. Stocktake of community physical activity and nutrition activities for children and their families in Waitemata DHB – December 2016

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
Health Promoting Schools (HPS)	Erica McKenzie (HPS coordinator, Child & Family Service) erica.mckenzie@waitemata dhb.govt.nz; 021853242	Ministry of Health (MoH)	Facilitators approach schools or schools self-refer	Year 1-8, deciles 1-4 schools and year 1-8, deciles 5-10 schools where there are high numbers of Māori, Pasifika or vulnerable groups in the school's student roll	HPS facilitators work with school leaders who provide leadership for their whole school community to identify health and wellbeing priorities for their students, and create and implement an action plan to address these priorities and monitor outcomes.	http://hps.tki.org.nz/
Fruit in Schools (FiS)	info@unitedfresh.co.nz; (09)4805057	MoH; United Fresh Incorporated	None	Primary and intermediate school aged children, decile 1-2 schools	Initiative provides one piece of fresh produce, fruit or vegetable, to school children daily.	http://www.unitedfresh.co.nz/our-work/fruit-in-schools and http://www.health.govt.nz/our-work/life-stages/child-health/fruit-schools-programme
Fonterra Milk for Schools	Fonterra milk for schools; contact@fonterramilkforschools.com; 0800900070	Fonterra	None	Primary school aged children	Initiative provides milk (200ml tetrapack) to children in all primary schools who wish to take part.	https://www.fonterramilkforschools.com/
Kick Start Breakfast Programme	Kick.Start.Breakfast@fonterra.co.nz	Fonterra in conjunction with Sanitarium	Self-referral	Primary, intermediate and secondary school aged children, decile 1-10 schools	Programme providing children at school with a breakfast of Weetbix and milk.	https://kickstartbreakfast.co.nz/
Enviroschools	Anke Nieschmidt (Programme and Projects Coordinator); anke.nieschmidt@enviroschools.org.nz;	Toimata Foundation	ECEs and schools can self-refer	Children who attend an ECE centre, primary, intermediate or secondary school.	The objective is to foster a generation of people who instinctively think and act sustainably through connecting with each other, their cultural identity and their land, to create a healthier, peaceful, more	http://www.enviroschools.org.nz/

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
	(07)9597321 ext 30				equitable society. Facilitators provide ECEs and schools with support and suite of resources to help them meet the above objective.	
Life Education Trust	Vicki Metekingi (Trusts Coordinator): Waitakere@lifeedtrust.org.nz; 0800 454 333	Life Education National Service Centre	Self-referral	Children at primary and intermediate school	The objective is to teach children about health, life, themselves, and other people, with the aim of showing them how to reach their full potential. Teachers go into schools and provide education sessions.	http://www.lifeeducation.org.nz/
Healthy Heart Award	http://www.learnbyheart.org.nz/index.php/contact-us	Heart Foundation (HF)	None	Children aged ≤5 years, who attend an ECE centre.	Bronze, silver, gold awards for ECEs. Programme assists ECEs to create an environment to promote physical activity and healthy eating to children and their families.	http://learnbyheart.org.nz
Fuelled 4 Life	Sarah Goonan (Food & Beverage Classification System Programme Manager); fuelled4life@heartfoundation.org.nz	HF	None	ECEs: Children aged ≤5 years, who attend an ECE centre. Schools: primary, intermediate and secondary school aged children	Healthier foods recommended for use	http://www.fuelled4life.org.nz/
Food for Thought	Naomi Sutton (Nutritionist - Upper North Island); Naomi.Sutton@foodstuffs.co.nz; 0212208102	HF and Foodstuffs	Self-referral	Primary school aged children (years 5 & 6), HF delivers programme to decile 1-4 schools Foodstuffs nutritionist delivers programme to decile 5-10 schools	A nutrition education programme designed to assist the teaching of food and nutrition	http://www.foodforthought.co.nz/

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
Heart Start Award	http://www.learnbyheart.org.nz/index.php/contact-us	HF	Self-referral	Primary school aged children	Module-based programme for improving environments	http://learnbyheart.org.nz
Heart Start Excellence Award	http://www.learnbyheart.org.nz/index.php/contact-us	HF	All schools with a MoE # can register with HF	Primary school aged children	Module-based programme for improving environments	http://learnbyheart.org.nz
Heart Schools Award	http://www.learnbyheart.org.nz/index.php/contact-us	HF	All schools with a MoE number can register on HF website	Primary school aged children	Exceptional school completes initiative for improving nutrition or PA environment. School completes up to 12 modules (minimum 5), including nutrition policy development, food service improvement, PA promotion and nutrition education for students and staff. 3 modules are from Food for Thought programme.	http://learnbyheart.org.nz
Travelwise	Auckland Transport: 0800103080	Auckland Transport	Schools self-refer	Primary school aged children and the community	Programme focuses on road safety education and fun ways to get to school. Aim: to teach children to be safe and encourage active transport. (Programme includes seasonal cycling programmes and courses for all ages)	https://at.govt.nz/cycling-walking/school-travel/travelwise-schools/
Be Healthy, Be Active	Nestle Consumer Services; 0800 830 840	Nestle	Self-referral	Intermediate school aged children (10-13 years) and their teachers	Programme to raise awareness around good nutrition and active lifestyles for intermediate school aged children. Aligned with the NZ Curriculum for health and physical education.	https://www.behealthybeactive.co.nz/
Food for Kids (Orchards in Schools)	Kids Can; (09)4781525	KidsCan	Self-referral	Decile 3 and 4 primary schools enrolled in Kids Can partnership	Programme provides food at school for thousands of financially disadvantaged children every day.	https://www.kidscan.org.nz/our-work/food-for-kids

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
Gardens for Health	Richard Main (Programme Manager): gardens@dpt.org.nz; (09)2739650	Diabetes Project Trust	Self-referral	Community groups, organisations, workplaces and schools	Programme provides support and advice to community groups or those looking to set up community gardens.	http://www.dpt.org.nz/our-programmes/garden-4-health
Garden to Table	Linda Taylor (Executive officer); (09)3798670 Vivienne Campbell (Area Coordinator Northland)	Garden to Table Trust	None	Primary and secondary school aged children	School-based programme aimed at assisting children to create a sustainable garden, harvest fruits and vegetables, and cook and share a meal they have produced	http://www.gardentotable.org.nz/
Maara Kai	tpk.tamaki-makaurau@tpk.govt.nz	Te Puni Kokiri	None	Māori children who attend: marae, kōhanga reo, kura, schools and Māori communities	Provides financial assistance to community groups wanting to set up sustainable community garden projects. small one-off funding grants of up to $2,000 (GST exclusive) are available to help Māori communities. Funding can be used for garden construction, gardening tools and compost, and education on gardening practices	https://www.tpk.govt.nz/_documents/tpk-maarakai-%20form2016.pdf
Nutrition and Dietetic Clinic	Julia Sekula (Clinical Director) j.sekula@auckland.ac.nz; (09)9237599	University of Auckland	GP/Plunket nurse	Children aged 4-5 years and their families; 1 full-day clinic per month	Student dietitian (5th year of Masters) provides dietetic assessment and intervention, under the supervision of a NZ Registered Dietitian	http://www.clinics.auckland.ac.nz/en/about/our-services/nutrition-and-dietetic-clinic.html
He Oranga Poutama	Wiremu Mato Kaihautu (He Oranga Poutama Manager) wiremu.mato@sportwaitakere.nz; (09)3904368 or 0272405276	Sports Waitakere	Self-referral	Maori children who attend: kōhanga reo; kura; primary, intermediate & secondary schools; marae; & Māori sports organisations	Initiative developed to increase participation and leadership of Māori in sport and traditional physical activity at community level. Kaiwhakahaere (administrators) encourage and provide support for Māori in different settings to become more active through healthier lifestyles, physical recreation and sport.	http://www.sportwaitakere.co.nz/Programmes-Resources/He-Oranga-Poutama/Key-Settings

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
Cycle West Kids Club	Rebecca Andrell (Acting Kids Club Coordinator); (09)9663120	Sport Waitakere	Self-referral	Pre-school aged children	The objective is to increase the number of residents choosing to cycle for sport, recreation or transport, and to introduce children to cycling whilst developing and strengthening their crucial gross motor skills. Children bring their bike and helmet to a community space and are taught how to ride and bike skills. Activities are appropriate for all levels of biking.	http://www.sportwaitakere.co.nz/Programmes-Resources/Get-Active/Cycle-West
Green Prescription Active Families	Active Families Co-ordinator: Active Families Co-ordinator: http://www.health.govt.nz/our-work/preventative-health-wellness/physical-activity/green-prescriptions/active-families-contacts	Harbour Sport	GP/Health Professional or self-referral	Children aged 5-12 years, who are: overweight/obese; inactive (<5 hours/week), have a stable medical/mental condition that could benefit from PA, and family ready to make lifestyle changes	Children referred by a health professional to attend. Group activity sessions with family. Sessions include physical activity, goal setting and review, advice on nutrition, health and well-being, parenting skills and building skills and confidence for sport. Child's progress is monitored. Families receive home visits to get support on nutrition knowledge, activity time, screen time and BMI for the child.	http://www.harboursport.co.nz/harbour-sport/active-families/
Green Prescription Active Teens	Liz Golding; grx@harboursport.co.nz; (09)4154659	Harbour Sport	GP/Health Professional or self-referral	Children aged 12-18 years, who are: overweight/obese; inactive (<5 hours/week), have a stable medical /mental condition that could benefit from PA	Main aim: weight loss and change in body measurements. Group activity sessions 1x/week for 10-weeks in Warkworth, including boxing, weight training and cardio sessions. Focus is on activity, nutrition and personal accountability. Monitoring of nutrition and activity achievements.	http://www.harboursport.co.nz/harbour-sport/active-teens/

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
SportsPasifik	Alexandria Nicholas (Pacific Island Community Manager); p-isupport@harboursport.co.nz)	Harbour Sport	Self-referral	Pacific females aged ≥12 years	SportsPasifik is a package of Pacific wellbeing programmes that includes family fitness classes and support of Pacific churches in weight loss and improving nutrition.	http://www.harboursport.co.nz/harbour-sport/sportspasifik/
Niumovement	Pat Green (Pacific Community Advisor); (09)4154653; patg@harboursport.co.nz	Harbour Sport	Self-referral	Pacific children aged 1-12 years and their familes	20-week healthy lifestyles programme aims to provide PA sessions for the whole family; nutrition and PA education, cooking demonstrations, cooking classes and fun games provided	http://www.harboursport.co.nz/harbour-sport/sportspasifik/
PolySports	Alexandria Nicholas (Pacific Island Community Manager); p-isupport@ harboursport.co.nz)	Harbour Sport	Self-referral	Pacific children aged 1-12 years	A free holiday programme aimed at increasing PA and healthy food messages through fun games and activities.	http://www.harboursport.co.nz/harbour-sport/sportspasifik/
Equip'd	Alexandria Nicholas (Pacific Island Community Manager); p-isupport@ harboursport.co.nz)	Harbour Sport	Self-referral	Pacific females aged 12-18 years	18-week programme aims to improve sports skills, fitness, confidence and self esteem through sports and fitness, nutrition sessions and mentoring	http://www.harboursport.co.nz/harbour-sport/sportspasifik/
Family Sports and Music Group	Gloria Gao (Service Manager and Social Worker); Gloria.Gao@cnsst.org.nz	Chinese New Settlers Services Trust (CNSST)	Self-referral or community group referral	Low income chinese families	Family sport and music activities for low income families with young children.	http://ethniccommunities.govt.nz/story/chinese-new-settlers-services-trust
Walking for my Health	Rawiri Residents Association: (09)2638202	Rawiri Residents Association	Self-referral	Children (age not specified)	A weekly walking group for mums, dads and children. The walking group aims to bring the community together, increase neighbourhood knowledge and reduce barriers to accessing health services.	None available
Healthy Babies, Healthy Futures	Pacific: Maria Kumitau (Programme Coordinator); maria.kumitau@thefono.org.nz; 021902571	The Fono, HealthWest, CNSST, The Asian Network	GP, community group, maternity	Pregnant Māori, Pacific, Asian and South Asian women with children aged	A text message-based programme providing information on healthy eating and being active for pregnant women and new mothers	https://thefono.org/services-fees/community-services/healthy-babies-healthy-futures-

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
TextMATCH	Māori: Danielle Tahuri; danielle.tahuri@healthwest.co.nz; 02265708189 Asian: Fangfang Chen; fangfangchen@cnsst.org.nz South Asian: Anjileena; Anjileen@asiannetwork.org.nz		services or self-referral	0-4yrs and their families		programme/
Healthy Babies, Healthy Futures	Pacific: Maria Kumitau (Programme Coordinator); maria.kumitau@thefono.org.nz; 021902571 Māori: Danielle Tahuri; Danielle.tahuri@healthwest.co.nz; 02265708189 Asian: Fangfang Chen; fangfangchen@cnsst.org.nz or Bushra; Bushra@asiannetwork.org.nz; (09)8152338	The Fono, HealthWest, CNSST, The Asian Network	GP, community group or self-referral	Pregnant Māori, Pacific, Asian and South Asian women with children aged 0-4yrs and their families	Community programme (2hrs/week for 6 weeks) focused on promoting healthy eating and being active for pregnant women and new mothers. Participants explore their health goals, needs and barriers through a "healthy conversation". Mothers attend a module every week learning: (1) being healthy for your baby, (2) making healthy food choices, (3) practical food preparation of healthy meals, (4) shopping on a budget, (5) reading food labels and (6) keeping active. Activities are fun and include cooking demonstrations, gardening, tai chi, yoga, group discussion, walking groups, quizzes, presentations and guest speakers.	https://thefono.org/services-fees/community-services/healthy-babies-healthy-futures-programme/
Vegetable Garden Project	The Fono (Health and Social Services); (09)8371780	The Fono	Community group-referral	Children aged ≥5 years and their families	A service provided to families to help them establish their own vegetable gardens. Aim: to increase daily vegetable intake for families.	https://www.thefono.org/services-fees/community-services/nutrition-programme-vegetable-garden-project/

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
FoodStorm	North Shore and Northcote: Karl & Kay Reyes (Regional Managers): karlkay@skids.co.nz West Auckland: Lisa Walker (Regional Manager): west@skids.co.nz	sKids (Safe Kids in Daily Supervision)	sKids centres self-refer	Primary school aged children who attend sKids centres	Programme run from sKids before/after school care centres teaches children the fundamentals of healthy eating and cooking. Children learn to cook 12 essential recipes which have been developed to meet HF guidelines.	http://www.skids.co.nz/foodstorm/
Get Set Go	Stephanie Cunningham (Get Set Go Manager)	Athletics NZ	Self-referral	School children aged 4-7 years	The objective of the programme is to teach children the fundamental movement and co-ordination skills required for any sport in a way that is structured and fun, for both children and adults. Get Set Go is also designed to provide teachers and coaches with the knowledge and skills they need to incorporate this into their lesson planning and coaching.	http://www.athletics.org.nz/Get-Involved/As-a-School/Get-Set-Go
PlayBall	Adam Brunt (Manager): manager@playball.co.nz; 021457571	PlayBall New Zealand	Self-referral	Children aged 3 months - 9 years	The main objectives are to improve basic movement, development and refining sport skills and techniques. Classes are held at ECEs, schools and community venues.	http://www.playball.co.nz/home
Play.Sport	Jo Colin (Young Person Participation Lead); jo.colin@sportnz.org.nz	Sport NZ		Primary, intermediate, and secondary school aged children	The objective is to improve the quality of young people's experiences of play, physical education, PA and sport. Professional development is provided to teachers, schools are given assistance in working with their community to support and deliver play, sport and physical activity opportunities for all students.	http://www.sportnz.org.nz/assets/Uploads/2016-SportNZ-Play-Sport-Overview.pdf

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
Greater Auckland Aquatic Action Plan (GAAAP)	Andrew Tara (Project Manager); andrew.tara@aktive.org.nz; 0220107428	Aktive-Auckland Sport & Rec, Water Safety NZ	Self-referral	Primary school aged children 7-10 years, decile 1-6 schools	Collaboration project that coordinates professionally delivered swimming lessons to primary school children. Children receive 8-10 free swim and survive lessons.	www.aktive.org.nz/Young-People/Greater-Auckland-Aquatic-Action-Plan-GAAAP.
Kai Auckland	Cissy Rock; Kaiauckland@gmail.com	Kai Auckland	Self-referral	Children all ages, who are overweight/obese, and their families	"People's food movement' offers a cohesive and integrated approach to creating connection an nourishment through food. Focuses on reducing systemic poverty, child hunger and social isolation, strengthening individual and community food security and increasing opportunities for volunteering within Auckland communities. Works in partnership with existing initiatives (e.g. Enviro Schools) to to influence the school setting and create a 'food movement'. Five mobilising initiatives include: vitual hub, physical food hubs, community gardens, schools and education and fruit trees.	http://kaiauckland.org.nz/
Movement Matters	Debbie Pigou: debbiep@harboursport.co.nz; (09)4154644	Harbour Sport	Self-referral	Early childhood educators	Physical literacy training for early childhood educators. Specific movement pattern skills for under 5s	http://www.harboursport.co.nz/harbour-sport/early-childhood/
Healthy Families NZ Waitakere	Kerry Allan; kerry.allan@sportwaitakere.nz; 0272092808	MoH	GP/Health Professional	Children aged ≥5 years and their families	Aims to develop a dedicated health promotion workforce in Waitakere. The workforce will provide encouragement and support to schools, workplaces, parents and families about making healthier choices	http://www.sportwaitakere.co.nz/About-Us/Healthy-Families-Waitakere-Team
Sport Waitakere	Lynette Adams; lynette.adams@sportwait	Train-the-Trainer Active			A train-the-trainer initiative using community champions to provide families	http://www.sportwaitakere.co.nz/

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets	Website
Trust	akere.nz; (09)3904361	Lifestyles Programme			with regular PA sessions and nutrition support.	
Healthy Schools GetWize2Health (Diabetes Projects Trust)	Angela Tsang (Schools Coordinator): schools@dpt.org,nz; (09)2739650	Diabetes Project Trust	Self-referral	Teachers of secondary school students, and school nurses	Programme provides workshop training to teachers, school nurses, and others needing practical tools to help students make better choices around food and PA. Training is curriculum aligned and comprehensive resource kits are provided. The Trust also supports canteens to improve the nutrition environment for students (e.g. tuckshop)	http://www.dpt.org.nz/our-programmes/healthy-school

Table 9. Stocktake of community physical activity and nutrition activities for children and their families in CM Health- December 2016

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets
Be Healthy, Be Active	Nestle Consumer Services; 0800 830 840	Nestle	Self-referral	Intermediate school aged children (10-13 years) and their teachers	Programme to raise awareness around good nutrition and active lifestyles for intermediate school aged children. Aligned with the NZ Curriculum for health and physical education.
Fonterra Milk for Schools	Fonterra milk for schools; contact@fonterramilkforschools.com; 0800900070	Fonterra	None	Primary school aged children	Initiative provides milk (200ml tetrapack) to children in all primary schools who wish to take part.
Food for Kids (and Orchards in Schools)	Kids Can; (09)4781525	KidsCan	Self-referral	Food for Kids Decile 1-2 schools. Unable to get numbers of schools easily from Kids Can but prescence in CM Health School Orchards Decile 3 and 4 primary schools enrolled in Kids Can partnership (only one school Papatoetoe High)	Programme provides food at school for thousands of financially disadvantaged children every day.
Food for Thought	Naomi Sutton (Nutritionist - Upper North Island); Naomi.Sutton@foodstuffs.co.nz; 0212208102	HF and Foodstuffs	Self-referral	Primary school aged children (years 5 & 6), HF delivers programme to decile 1-4 schools	A nutrition education programme designed to assist the teaching of food and nutrition

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets
				Foodstuffs nutritionist delivers programme to decile 5-10 schools	
FoodStorm		sKids (Safe Kids in Daily Supervision)	sKids centres self-refer	Primary school aged children who attend sKids centres	Programme run from sKids before/after school care centres teaches children the fundamentals of healthy eating and cooking. Children learn to cook 12 essential recipes which have been developed to meet Heart Foundation guidelines.
Fruit in Schools (FiS)	info@unitedfresh.co.nz; (09)4805057	MoH; United Fresh Incorporated	None	Primary and intermediate school aged children, decile 1-2 schools	Initiative provides one piece of fresh produce, fruit or vegetable, to school children daily.
Fuelled 4 Life	Sarah Goonan (Food & Beverage Classification System Programme Manager); fuelled4life@heartfoundation.org.nz	HF	None	ECEs: Children aged ≤5 years, who attend an ECE centre. Schools: primary, intermediate and secondary school aged children	Healthier foods recommended for use
Garden to Table	Linda Taylor (Executive officer); (09)3798670 Vivienne Campbell (Area Coordinator Northland)	Garden to Table Trust	None	Primary and secondary school aged children. Currently 8 schools in CM Health	School-based programme aimed at assisting school children to create a sustainable garden, harvest fruit and vegetables, and cook and share a meal they have produced
Gardens4Health	Richard Main (Programme Manager): gardens@dpt.org.nz;	Diabetes Project Trust	Self-referral	Community groups, organisations, workplaces and	Programme provides support and advice to community groups or those looking to set up community gardens.

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets
	(09)2739650			schools	
Greater Auckland Aquatic Action Plan (GAAAP)	Andrew Tara (Project Manager); andrew.tara@aktive.org.nz; 0220107428	Aktive-Auckland Sport & Recreation in partnership with Water Safety NZ	Self-rererral	Primary school aged children 7-10 years, decile 1-6 schools	Collaboration project that coordinates professionally delivered swimming lessons to primary school children. Children receive 8-10 free swim and survive lessons.
Health Promoting Schools (HPS)	CM Health: Venera Ukmata (Operations Manager) 021 518 627 Vnera.Ukmata@middlemore.co.nz Kay Lawrie (Service Manager) Kay Lawrie 021 55 29 74 kay.lawrie@middlemore.co.nz	Ministry of Health (MoH)	Facilitators approach schools or schools self-refer	Decile 1-4 schools (Year 1-8 schools) and schools with high Māori /Pacifika population (Year 1-8 schools)	HPS facilitators work with school leaders who provide leadership for their whole school community to identify health and wellbeing priorities for their students, and create and implement an action plan to address these priorities and monitor outcomes.
Healthy Heart Award	http://www.learnbyheart.org.nz/index.php/contact-us	Heart Foundation (HF)	None	Children aged ≤5 years, who attend an ECE centre.	Bronze, silver, gold awards for ECEs. Programme assists ECEs to create an environment to promote physical activity and healthy eating to children and their families.

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets
Healthy Schools (GetWize2Health) (Diabetes Projects Trust)	Angela Tsang (Schools Coordinator): schools@dpt.org,nz; (09)2739650	Diabetes Project Trust	Self-referral	Teachers of secondary school students, and school nurses	Programme provides onsite group or offsite workshop training to teachers, school nurses, and others needing practical tools to help students make better choices around food and activities. Training is curriculum aligned and a comprehensive resource kit is provided to enable the delivery of a multi-part programme to year 9 students. Advice and support for making changes to the environment, including the Tuckshop, is available. Ongoing visits and telephone support provided.
Heart Schools Award (schools)	http://www.learnbyheart.org.nz/index.php/contact-us	HF	All schools with a MoE number can register on HF website	Primary school aged children	Exceptional school completes initiative for improving nutrition or PA environment
Heart Start Award (ECEs)	http://www.learnbyheart.org.nz/index.php/contact-us	HF	Self-referral	ECEs: Children aged ≤5 years, who attend an ECE centre.	Module-based programme for improving environments
Heart Start Excellence Award	http://www.learnbyheart.org.nz/index.php/contact-us	HF	All schools with a MoE number can register on HF website	Primary school aged children	Module-based programme for improving environments

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets
Kai Auckland	Cissy Rock; Kaiauckland@gmail.com	Kai Auckland	Self-referral	Children all ages, who are overweight/obese, and their families	"People's food movement" offers a cohesive and integrated approach to creating connection and nourishment through food. Focuses on reducing systemic poverty, child hunger and social isolation, strengthening individual and community food security and increasing opportunities for volunteering within Auckland communities. Works in partnership with existing initiatives (e.g. Enviro Schools) to influence the school setting and create a 'food movement'. Five mobilising initiatives include: vitual hub, physical food hubs, community gardens, schools and education and fruit trees.
Kick Start Breakfast Programme	Kick.Start.Breakfast@fonterra.co.nz	Fonterra in conjunction with Sanitarium	Self-referral	Primary, intermediate and secondary school aged children, decile 1-10 schools	Programme providing children at school with a breakfast of Weetbix and milk.
Marae Food Gardens Project			None	Ormiston Primary and others around Auckland	A research team worked with eight urban marae in Tāmaki Makaurau, conducting interviews with representatives involved in various aspects of the gardens. An analysis was undertaken to explore participants' motivations for involvement in marae gardens and the multi-dimensional outcomes of the activity. Particular emphasis on the importance of locational context to indigenous participation in health promotion

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets
Taubale/CiCi/Qito Me Bula (Walk/Play To Live)	Health Promotion Agency (Active Healthy Strong Community Partnerships) http://www.hpa.org.nz/	Drodrolagi Health Trust	Self-referral	Families in Pacific communities	Family sports days for the Pacific community with PA games and competitions for all ages and activity levels. Sports days help to encourage families to maintain PA as a family.
Travelwise	Auckland Transport: 0800103080	Auckland Transport	Schools self-refer	Primary school aged children and the community	Programme focuses on road safety education and fun ways to get to school. Aim: to teach children to be safe and encourage active transport. (Programme includes seasonal cycling programmes and courses for all ages)
Active Tots	Brewster Leisure centre Phone: 09 262 5965 Email: allanbrewsterleisure@aucklandcouncil.govt.nz	Brewster Leisure centre/Auckland council	Self-referral	2-5 year olds	Enhance children's physical and social development with fun introduction to sports 2-5 year olds
Faith City Fitness		Faith City Church			Although centred around physical activity, this programme also looks at other aspects of life and the influences on health and fitness. A community fitness initiative where all are welcome and don't have to be part of the church.
Healthy Lifestyles Programme		Mangere Budgeting Services Trust			Programme with a specific focus on financial literacy and how to budget in a healthy lifestyle with free supermarket tours, cooking classes and nutritional advice. Funded by CM HEALTH.

Initiative	Contact	Organisation	Referrer	Target Group	Objectives / Targets
HOPE	reception@diabetesauckland.org.nz	Diabetes New Zealand			HOPE (Healthy Options = positive eating) is a family / whānau centred health promotion programme delivered in community settings over four sessions
Keeping Kidz Active	Brewster Leisure centre Phone: 09 262 5965 Email: allanbrewsterleisure@aucklandcouncil.govt.nz	Brewster Leisure centre/Auckland council			Programme designed to keep kids active. Includes a variety of exercise, games, sports and guided nutritional plan to ensure your child maintains a healthy lifestyle
Raise Up	Brewster Leisure centre Phone: 09 262 5965 Email: allanbrewsterleisure@aucklandcouncil.govt.nz	Brewster Leisure centre/Auckland council		Youth	Youth drop in basketball, table tennis, squash
South Asian Health Promotion Programme	ProCare				A South Asian Physical Activity Leader is contracted, in partnership with East Health, to facilitate healthy eating education sessions in a variety of South Asian languages for the Manukau community.
Steps for Life	info@stepsforlife.co.nz; (09)6343593	Monty Betham Steps For Life Foundation	Self-referral	Overweight secondary school aged children and their families	Programme (5-6hrs/week for 12 weeks) focuses on physical health, healthy food, mind health and healthy family. Includes physical activity sessions, nutrition advice and guided supermarket tour.

Appendix 3: Population demography and Obesity data

Table 1. Four year old children identified with obesity (BMI ≥98th percentile) at B4SC 01 January 2016 – 31 December 2016 by ethnicity

	WDHB		ADHB		CM Health	
	Number	Percentage of ethnic group that had B4SC	Number	Percentage of ethnic group that had B4SC	Number	Percentage of ethnic group that had B4SC
Māori	103	9.8%	74	12.3%	199	11.2%
Pacific	149	19.3%	207	18.9%	434	19.6%
Asian	66	3.2%	54	3.1%	86	4.8%
Other	147	4.1%	73	3.3%	79	4.3%
Total	**465**	**6.2%**	**408**	**7.3%**	**798**	**10.5%**

Table 2. Four year old children identified with obesity (BMI ≥98th percentile) at B4SC 01 January 2016 – 31 December 2016 by socio-economic deprivation quintile

	WDHB		ADHB		CM Health	
	Number	Percentage of ethnic group that had B4SC	Number	Percentage of ethnic group that had B4SC	Number	Percentage of ethnic group that had B4SC
Quintile 1	64	3.4%	38	3.4%	46	4.4%
Quintile 2	72	3.8%	49	4.2%	44	4.2%
Quintile 3	94	5.8%	77	7.5%	60	6.8%
Quintile 4	131	10.2%	64	6.7%	113	9.3%
Quintile 5	103	13.5%	180	13.6%	535	15.7%
Total	**464**	**6.2%**	**408**	**7.3%**	**798**	**10.5%**

Table 3. Four year old children identified with overweight or obesity (BMI ≥91st percentile) at B4SC 01 January 2016 – 31 December 2016 by ethnicity

	WDHB		ADHB		CM Health	
	Number	Percentage of ethnic group that had B4SC	Number	Percentage of ethnic group that had B4SC	Number	Percentage of ethnic group that had B4SC
Māori	280	26.6%	185	30.8%	475	26.8%
Pacific	308	39.9%	458	41.7%	848	38.2%
Asian	244	11.7%	165	9.6%	214	11.9%
Other	594	16.6%	306	13.9%	267	14.6%
Total	**1426**	**19.0%**	**1114**	**19.8%**	**1804**	**23.6%**

Table 4.Four year old children identified with overweight or obesity (BMI ≥91st percentile) at B4SC 01 January 2016 – 31 December 2016 by socio-economic deprivation quintile

	WDHB		ADHB		CM Health	
	Number	Percentage of ethnic group that had B4SC	Number	Percentage of ethnic group that had B4SC	Number	Percentage of ethnic group that had B4SC
Quintile 1	276	14.5%	157	13.9%	149	14.1%
Quintile 2	292	15.4%	176	15.1%	130	12.3%
Quintile 3	309	19.1%	181	17.7%	137	15.5%
Quintile 4	308	24.1%	167	17.4%	292	24.1%
Quintile 5	240	31.5%	432	32.5%	1096	32.1%
Total	**1425**	**19.1%**	**1113**	**19.9%**	**1804**	**23.7%**

Appendix 4: Health Equity Campaign

Healthy Weight, Healthy Kids			
Project Name	**Descriptor**	**Service/Organisation**	**Project Team Lead**
Weigh While We Wait - Healthy weight gain during pregnancy	To work with one GP practice/LMCs to test promotion of healthy weight gain in pregnancy	Dawson Road GP (ETHC), CM Health	Sue Tutty
Healthy Mums, Healthy Babies 4 life	To test whether a lifestyle intervention for obese pregnant women leads to anticipated changes in diet and physical activity.	CM Health	Deirdre Nielsen
Prepare Together – Diabetes Care Before Pregnancy	To develop a best practice approach to deliver group education sessions for women planning pregnancy with diabetes and individualised education and pregnancy planning for women with complex diabetes	CM Health	Lesley Maclennan / Elaine Chong
Child's play	To co-design with mothers and whānau, the delivery of Fundamental Movement Skills interventions for children from birth to 5 years	Counties Manukau Sport	Russell Preston / Sheryl Law
Kidz First ED Screening	To develop a brief screening programme in Kidz First ED/ inpatient to identify obese and overweight children	CM Health	Teuila Percival
Braking the cycle	To form a bike club for 5-14 year olds to increase physical activity	Otara Health	John Coffey
Kura Kai Ora	To co-design key messages with Māori and Pacific children (& Toi Tangata and Pacific heartbeat) to develop a toolkit of health promotion messages for schools	NHC - Mana Kidz	Alicia Berghan
Planned Pregnancy: It's a woman's choice	To reduce childhood obesity by facilitating improved preconception care and maternal weight through planned pregnancy and maternal messaging.	CM Health	Sue Tutty

Appendix 5: Monitoring and Evaluation

Monitoring and evaluation is critical to any new programme or activity. It allows us to assess whether we have delivered on the goals, aims and objectives of the programme, whether we have achieved the desired outcome and to assess the relative contribution of different components or processes. The goals of obesity prevention and treatment at an individual level will be different to the goals for the heath sector when considering the population as a whole. The distinctions have been captured by the Institute of Medicine and supported by the findings of the WHO Commission on Ending Childhood Obesity – see table below.

Goals of obesity prevention and treatment in children and adolescents Source: adapted from Institute of Medicine, USA, 2012 (70)	
Individual Children and adolescents	**Population of children and adolescents**
A healthy weight trajectory	Reduction in the incidence of childhood and adolescent obesity
A healthy diet (quality and quantity)	Reduction in the prevalence of childhood and adolescent obesity
Appropriate amounts and types of physical activity	Reduction of mean population BMI levels
Achievement of physical, psychosocial and cognitive growth and developmental goals	Improvement in the proportion of children and adolescents meeting dietary guidelines
A healthy body image and the absence of potentially-adverse weight concern or restrictive eating behaviours	Improvement in the proportion of children and adolescents meeting physical activity recommendations
For those affected by obesity, a reduction in level of overweight, improvement in obesity-associated comorbidities, and improvement in risk factors for excess weight gain	Reduction in health-care costs associated with obesity in children and adolescents
	Achievement of physical, psychological and cognitive growth and developmental goals

In this area, where evidence is limited, there is a particular need for robust monitoring and evaluation. Programmes should be able to demonstrate improvements in weight outcomes and/or clearly identified surrogate measures of the pathway to unhealthy weight, such as sugar-sweetened beverage consumption, and physical activity levels. Other process measures may be useful such as the utilisation of the Auckland Regional Health Pathway (ARHP).

Within individual programmes instituted as part of the Childhood Healthy Weight Action Plan it is expected that monitoring and evaluation plans will be developed and clear linkages back to this plan articulated. For some of these programmes additional monitoring and evaluation funding will be required. Programmes should ensure data is collected including anthropometric measures that will describe a child's weight trajectory over the course of the programme, as well as measuring physical activity and diet and any comorbid disease.

Alongside these measures it will be important to assess for possible detrimental effects including assessing psychosocial wellbeing indices.

These different goals will lead to the institution of different targets and different measures for programmes and for measuring the collective impact of the Metro Auckland Healthy Weight Action Plan. Obesity should be situated within the wider context of healthy lifestyles across the life course and consequently it will be important to identify related goals in maternal health and wellbeing.

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