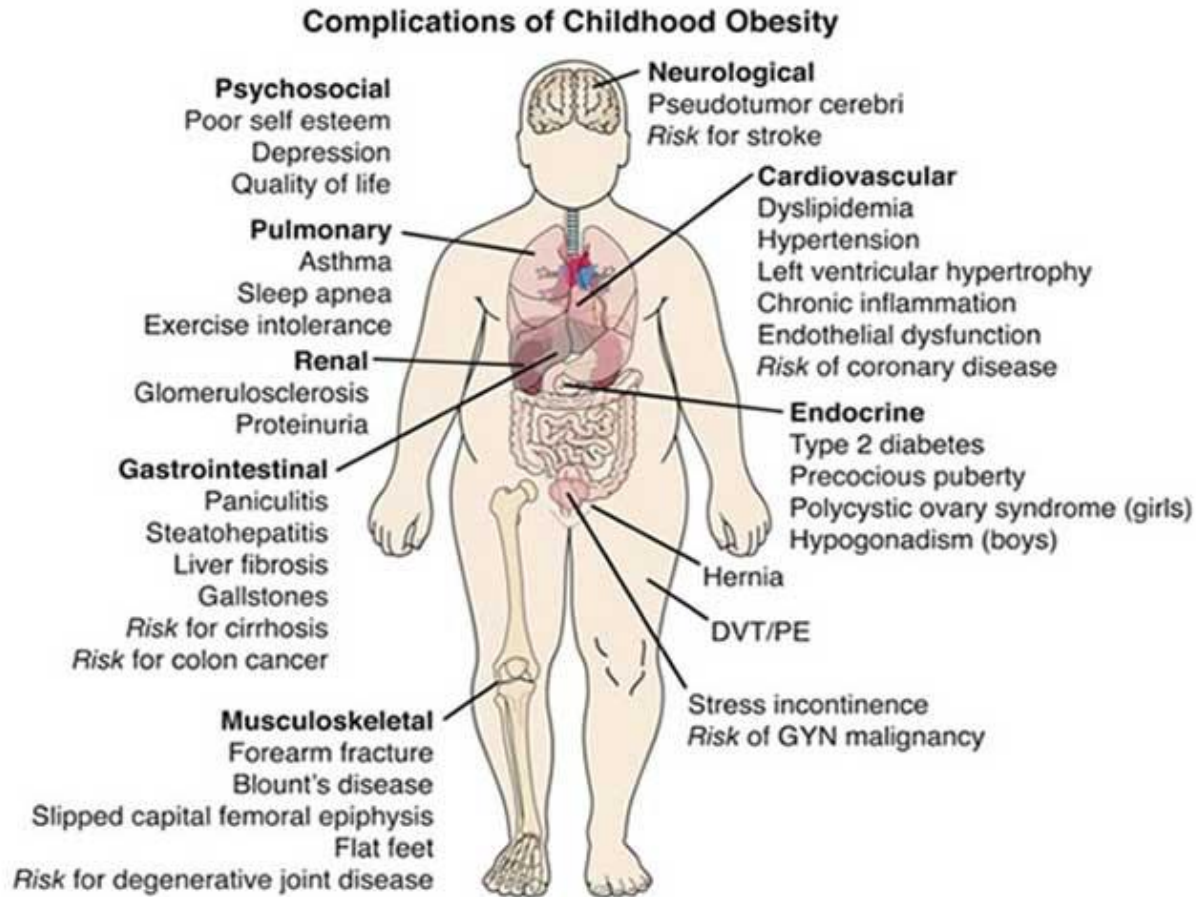


Obesity in childhood

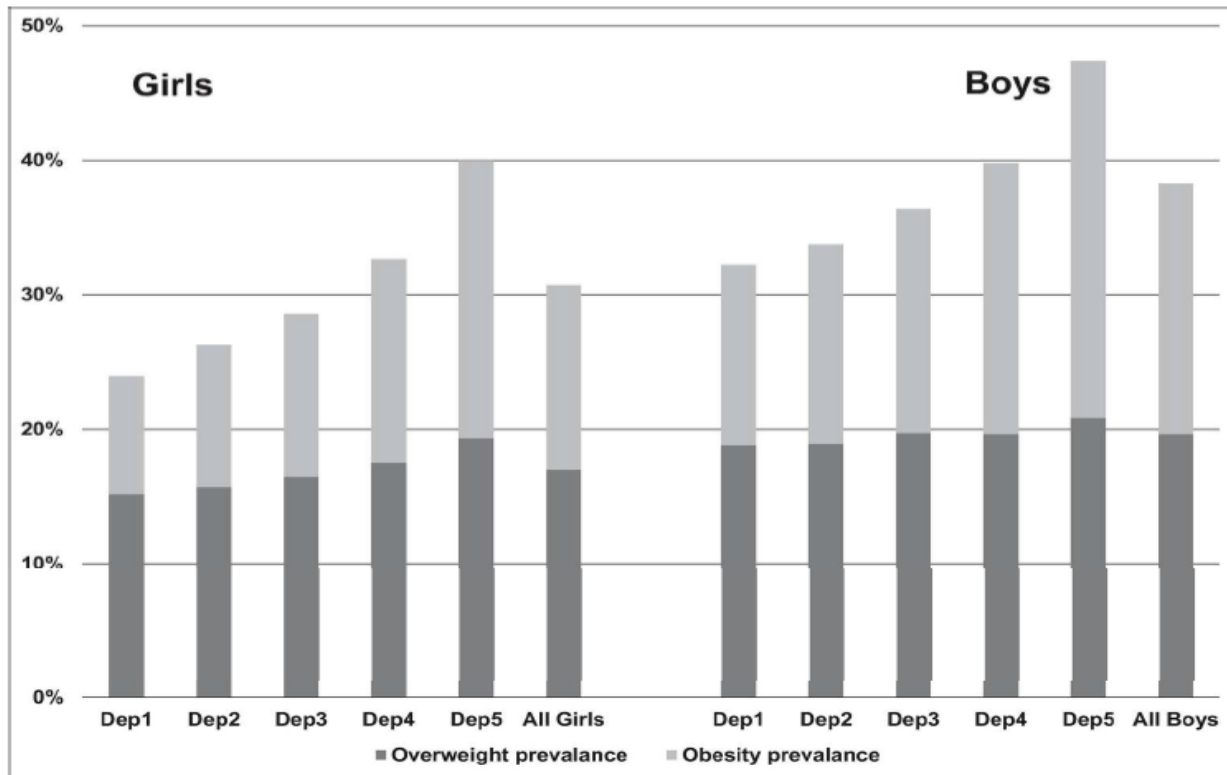
Why does it matter?



Child obesity has significant health risks



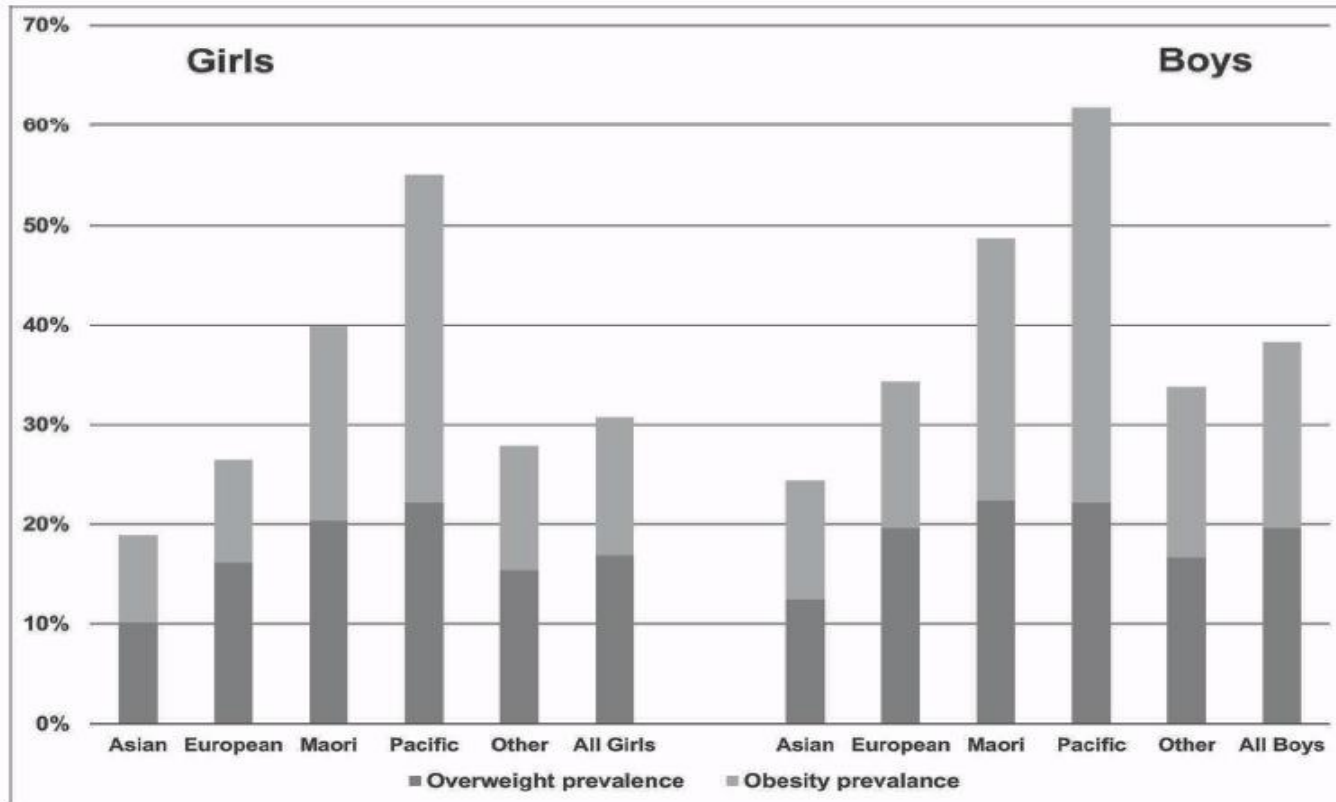
Raised BMI by Dep Index (B4SC data 2009-13)



Overweight and obesity prevalence rates by gender and deprivation quintile (WHO2006 reference standards)



Raised BMI by Ethnicity (B4SC data 2009-13)

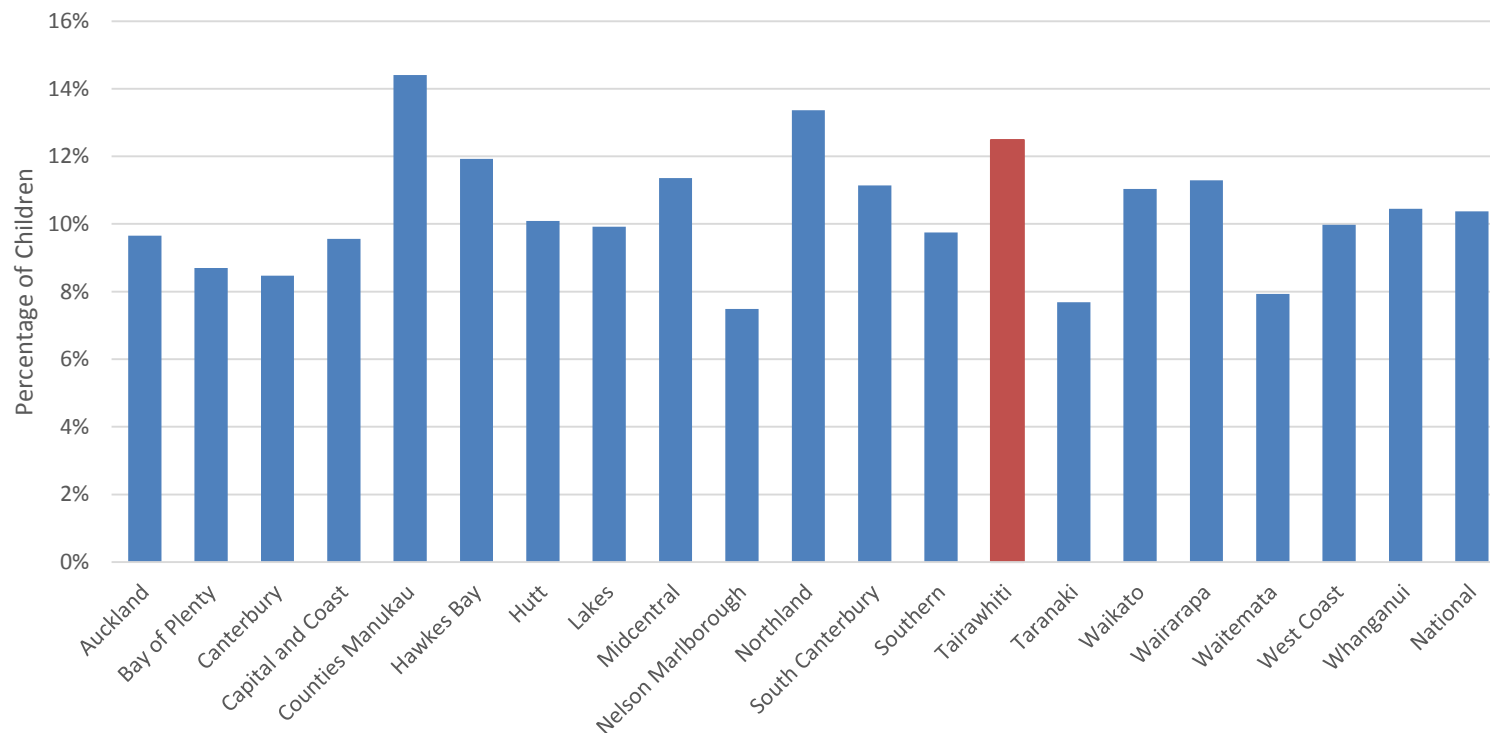


Overweight and obesity prevalence rates by gender and ethnicity (WHO2006 reference standards)



Child obesity (>98th centile) at 4 years

January 2016



A bio-psycho-social approach to obesity

Biology

- Individual genetic factors play a small but important role in obesity.
- The rapid increase in obesity in the last few decades is likely to be due to an epigenetic change caused by our environment and behaviour.
- Pre conception and gestational environments are also important
- The “Microbiome” influences hormones associated with appetite and obesity

Lifestyle and social influences

- An individuals’ diet and physical activity is the proximal cause of obesity.
- However an individuals’ choices are influenced by the availability of information, and their understanding of the information they receive.
- Learnt behaviour and social patterns of interaction also play a significant, but poorly understood role.

Environmental influences

- The choices an individual makes are always constrained by their environment.
- Energy dense foods are cheap, readily available and heavily marketed.
- Our level of physical activity has decreased and technological, social and environmental changes have led to more sedentary lifestyles.



Achieving a healthy weight

Enablers

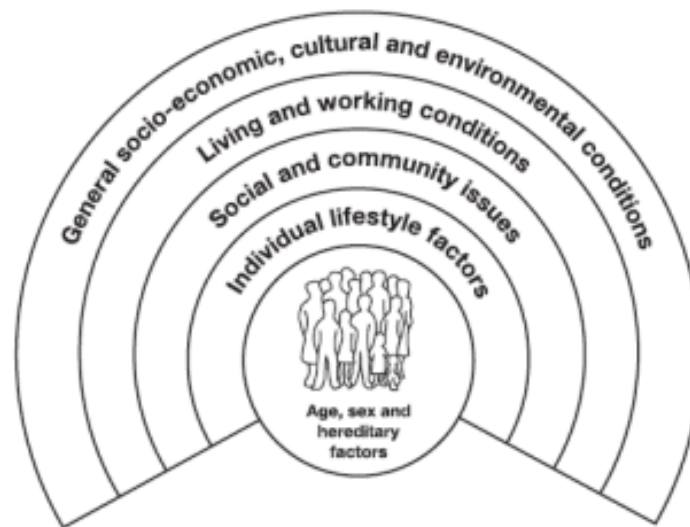
- **Leadership and coordination**
 - across central government agencies and within the health sector
- **Healthy environments**
 - Clear, consistent messages about nutrition, physical activity and healthy weight
 - Retail environment: promotion of healthy foods (Health Star Ratings)
- **Community capacity and capability**
 - Culturally relevant local level activities for Māori and Pacific communities, and low socio-economic communities
- **Public are empowered and supported**
 - By developing individual skills for people to make healthier lifestyle choices
 - Better information and labelling
- A **collaborative approach** is adopted
 - across the health sector, government, food industry, marketing and advertising, sport and recreation sectors, and other relevant parties



Achieving a healthy weight

Barriers

- **Environmental and wider societal factors**, for example
 - Health and food literacy
 - Food composition and environment
 - Reduced opportunity for physical activity in an increasingly urbanized and digital world
- **Community and social environment**, for example
 - Dependency on **passive** forms of **transport**
 - Increased screen-based entertainment
- **Individual behaviours**, for example
 - Eating large portion sizes
 - Snacking on high-kilojoule foods
- **Psychosocial factors**, for example
 - Parents of obese children do not identify their obese child as overweight
 - Influence of peers, siblings and wider community

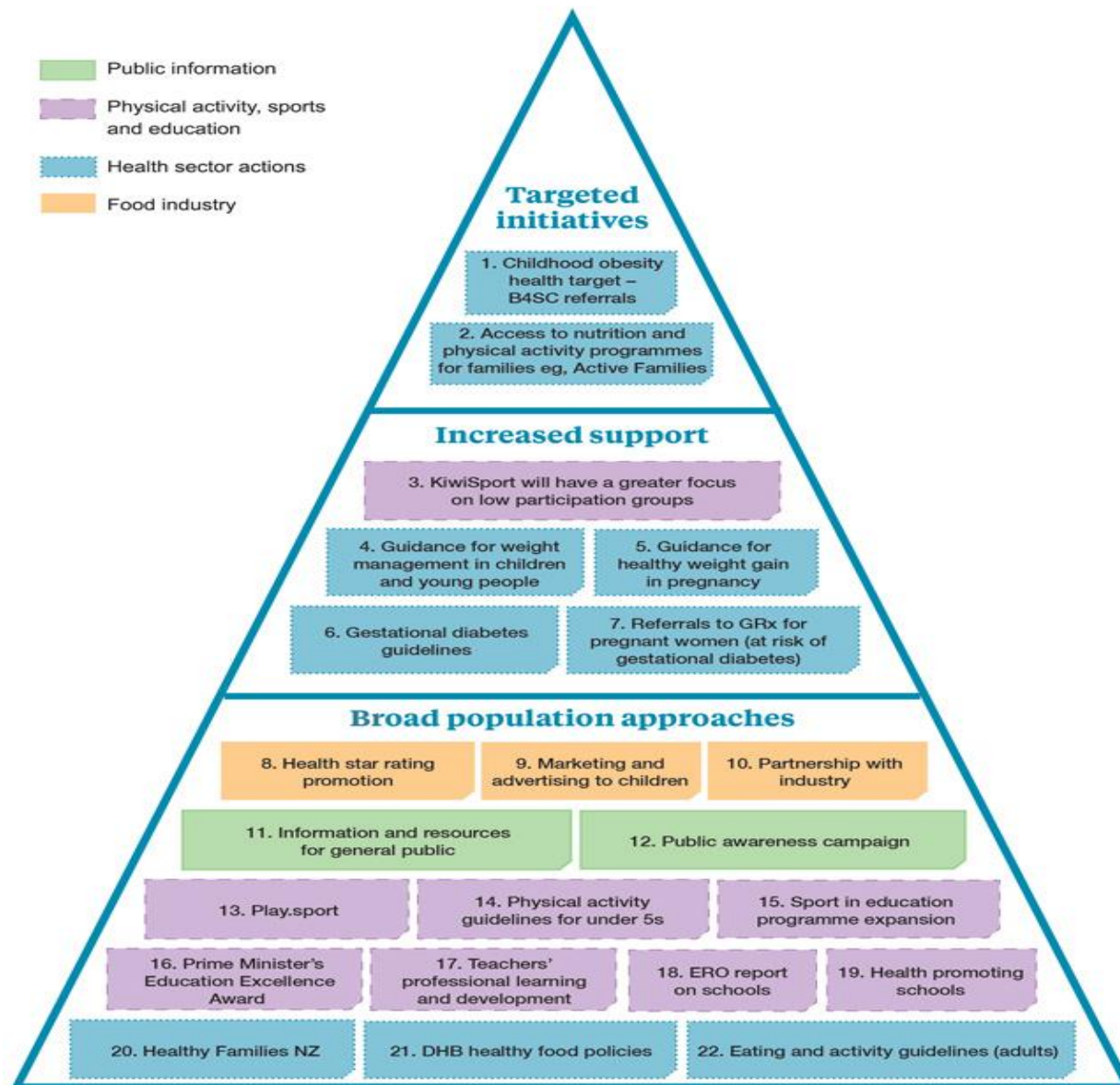


Childhood obesity plan overview

- The Government announced the Childhood Obesity Plan on October 19, 2015. The package of initiatives aims to prevent and manage obesity in children and young people up to 18 years of age.
- The Plan has three focus areas made up of 22 initiatives (either new or an expansion of existing initiatives) :
 - **Targeted interventions** for those who are obese, increasing over time
 - **Increased support** for those at risk of becoming obese
 - **Broad approaches** to make healthier choices easier for all New Zealanders.
- The focus is on food, the environment and being active at each life stage, starting during pregnancy and early childhood. The package brings together initiatives across government agencies, the private sector, communities, schools, families and whanau.
- Information can be found on the following website:
<http://www.health.govt.nz/>



The childhood obesity plan

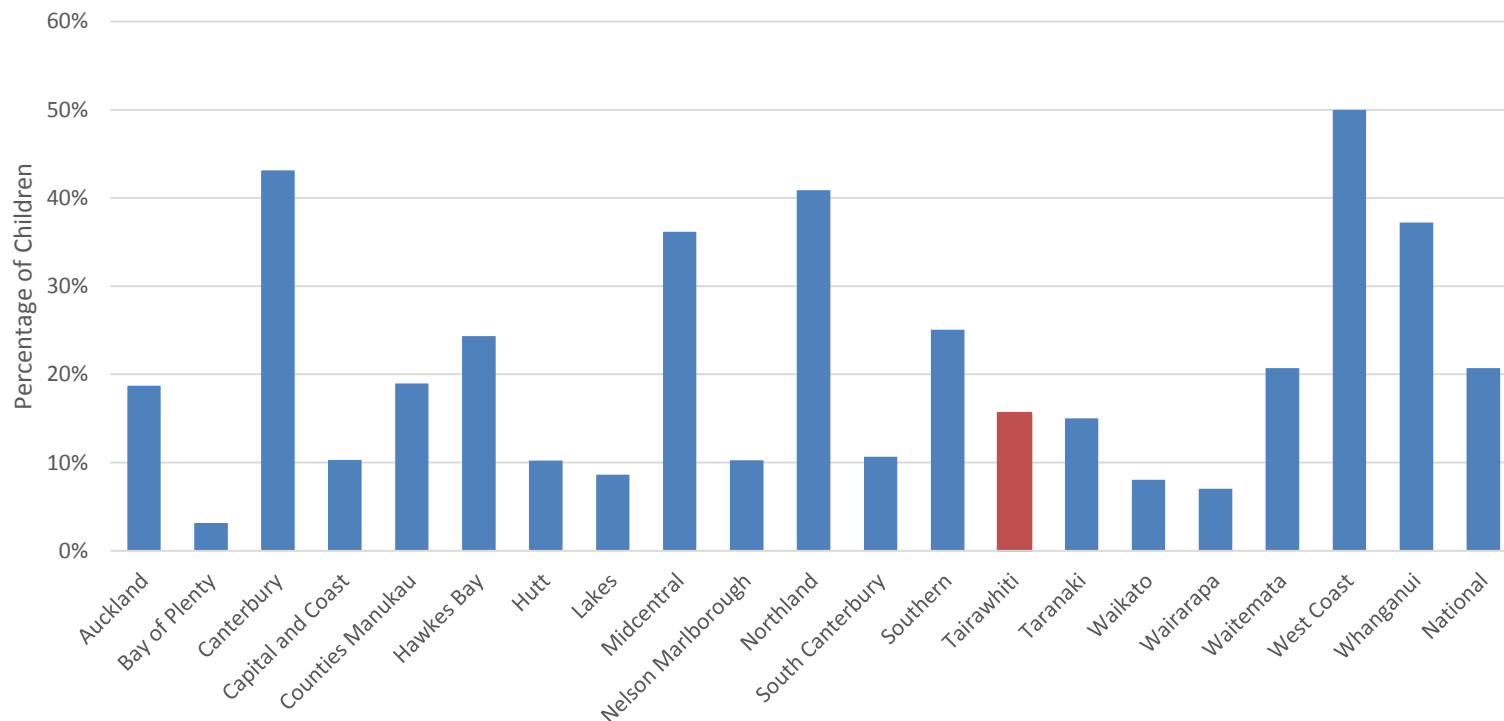


Childhood obesity health target – Raising Healthy Kids

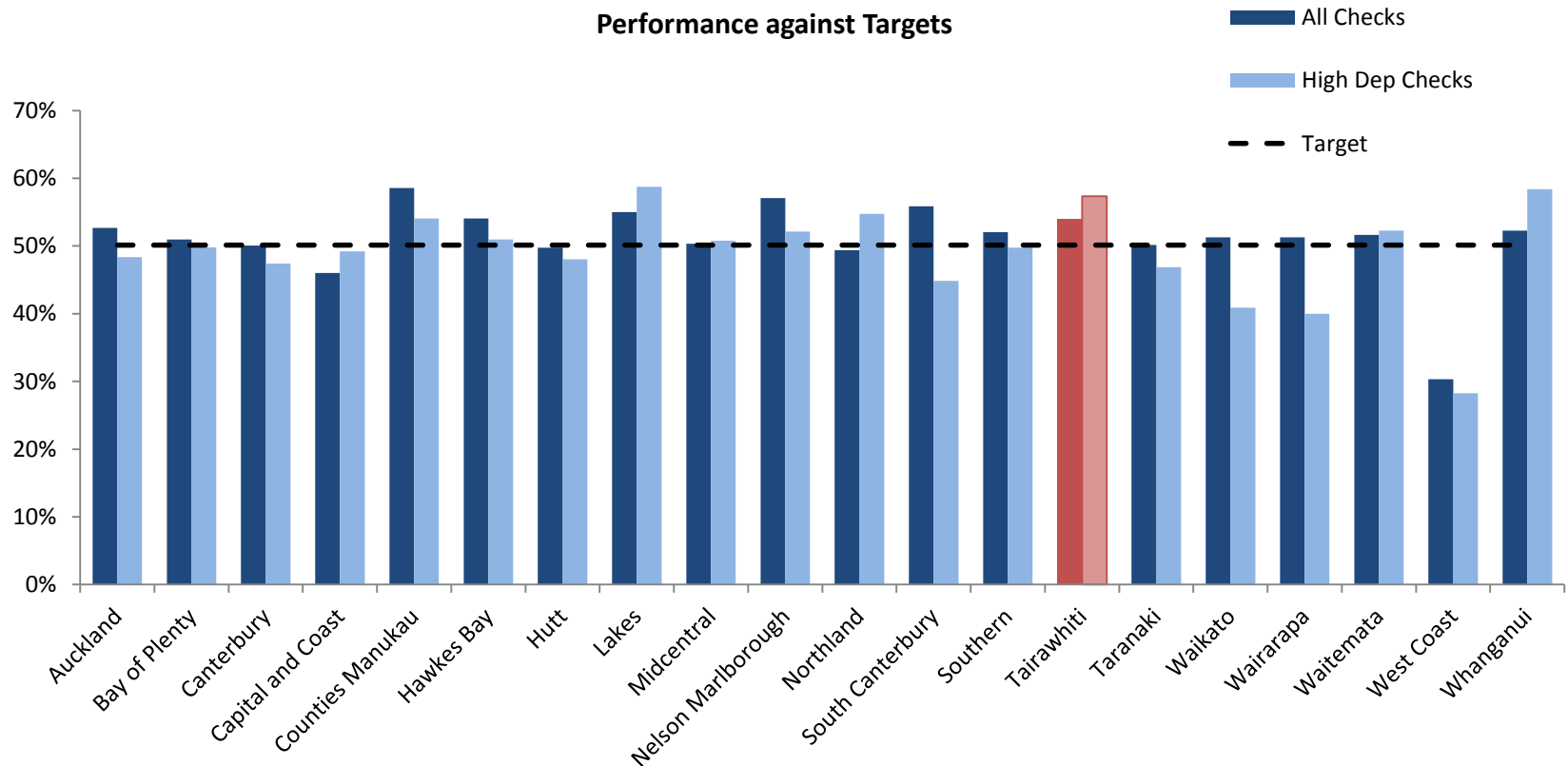
- A new health target has been implemented from 1 July 2016:
 - By December 2017, 95% of obese children identified in the Before School Check (B4SC) programme will be referred to a health professional for clinical assessment and family based nutrition, activity and lifestyle interventions.
- The target was selected as the B4SC focuses on early intervention to ensure positive, sustained effects on health.
- The target defines obesity as a BMI above the 98th centile on the NZ-WHO growth chart.



Obese children referred to services January 2016



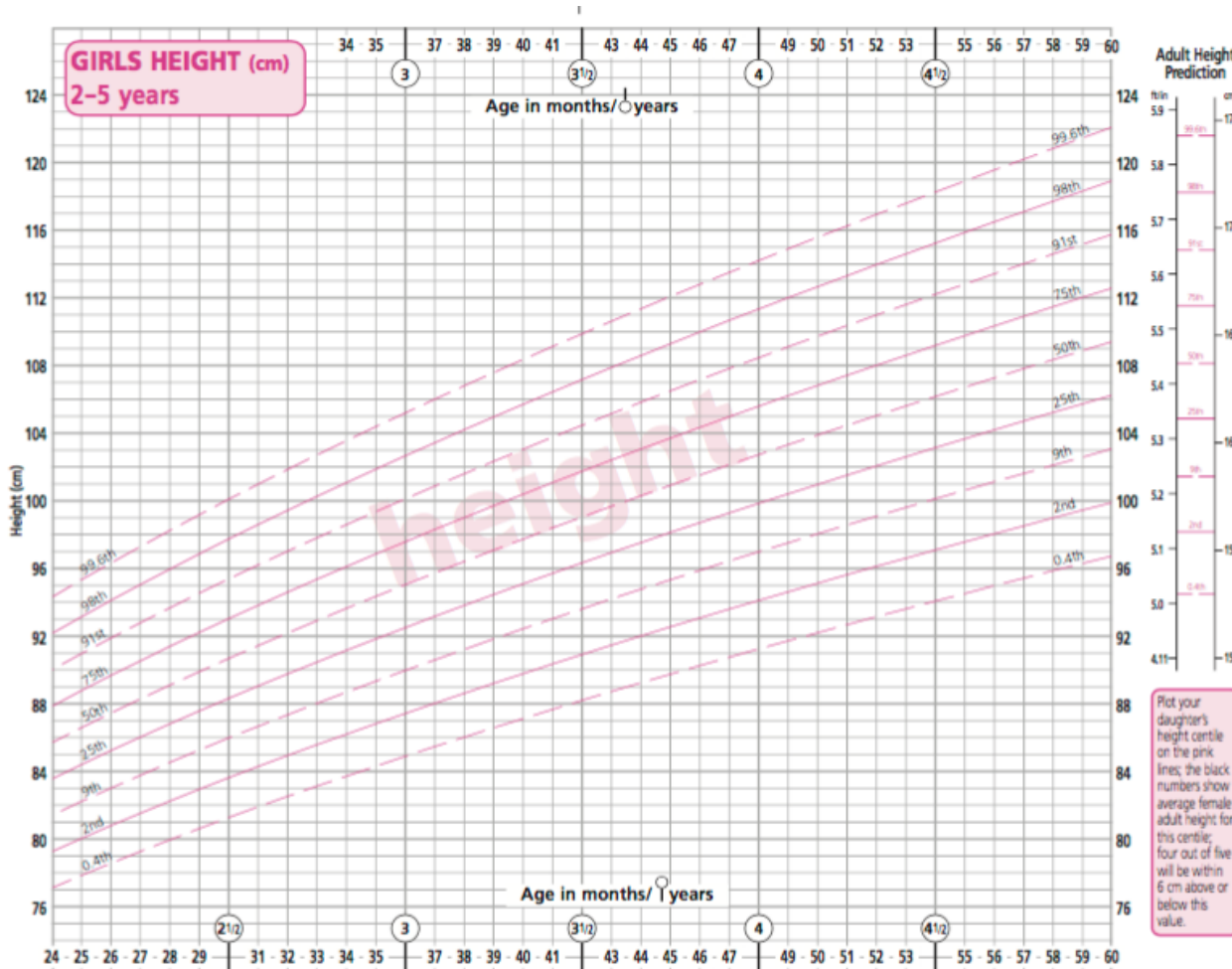
B4School check performance by DHB



NZ-WHO growth charts

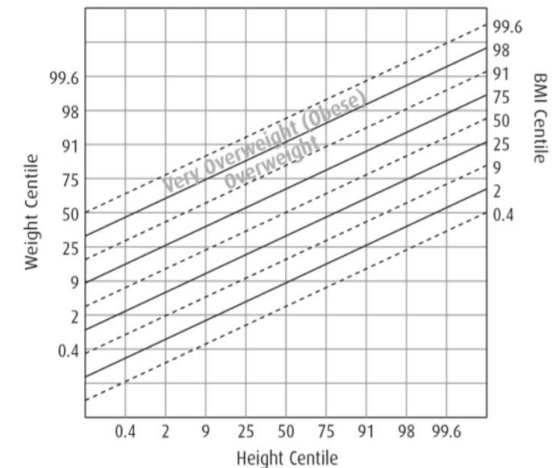
- In 2008, new Growth charts based on growth standards developed by the World Health Organization in 2006 were introduced into the Well child Tamariki Ora programme.
- The charts are expected to form the basis of a national growth chart for children and adolescents
- The new charts used the growth patterns of babies that had only been breastfed, and were based on optimal growth, rather than on average growth.
- A new WHO growth reference for adolescents has also been developed to bridge the gap between 5 and 19 years. The BMI +1SD at 19 closely matches the adult value for overweight and +2SD for obesity the adult value for obesity.

NZ-WHO growth charts



Weight-height to BMI conversion chart

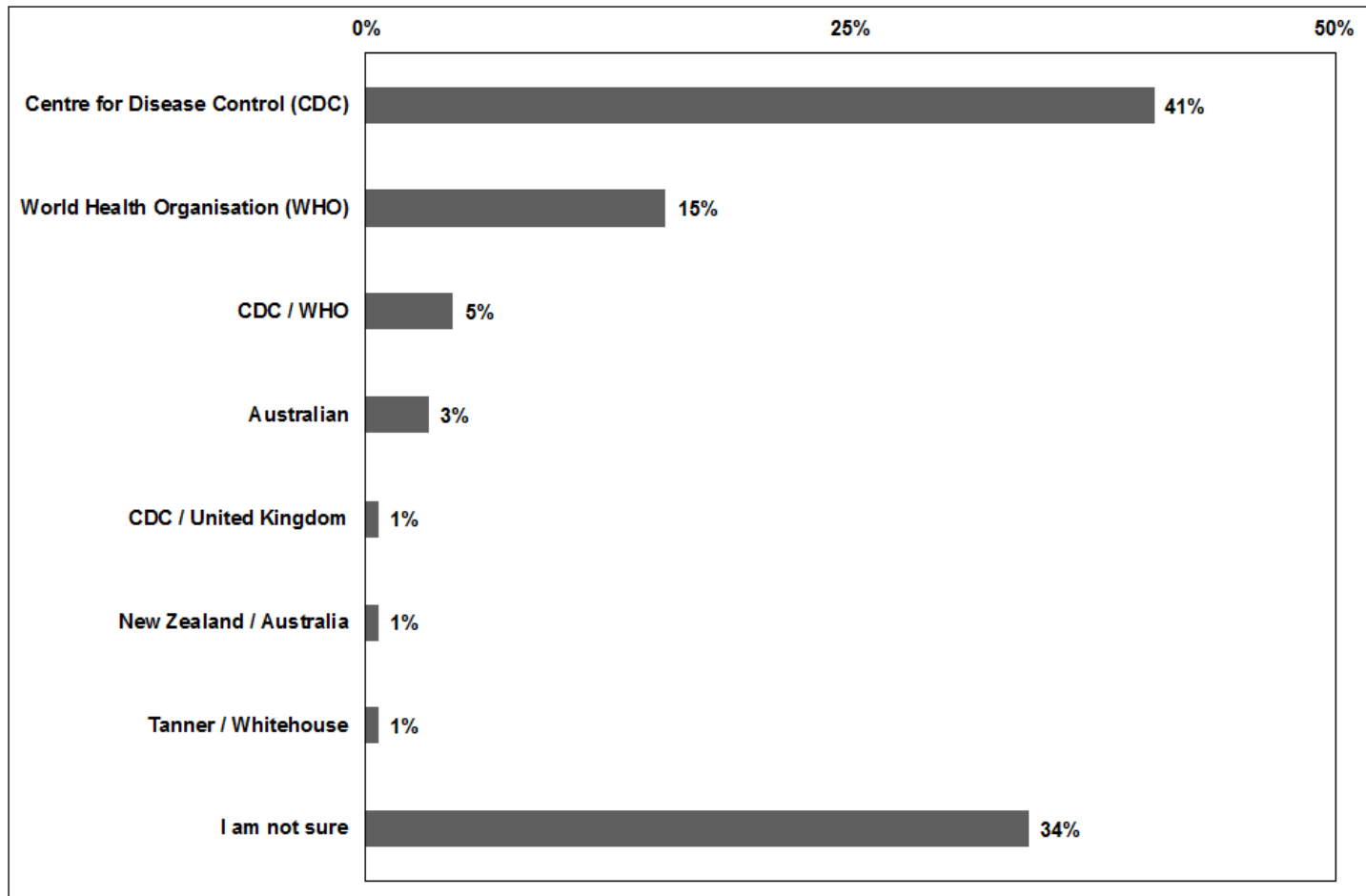
$$\text{BMI} = \frac{\text{weight in kg}}{(\text{height in m})^2}$$



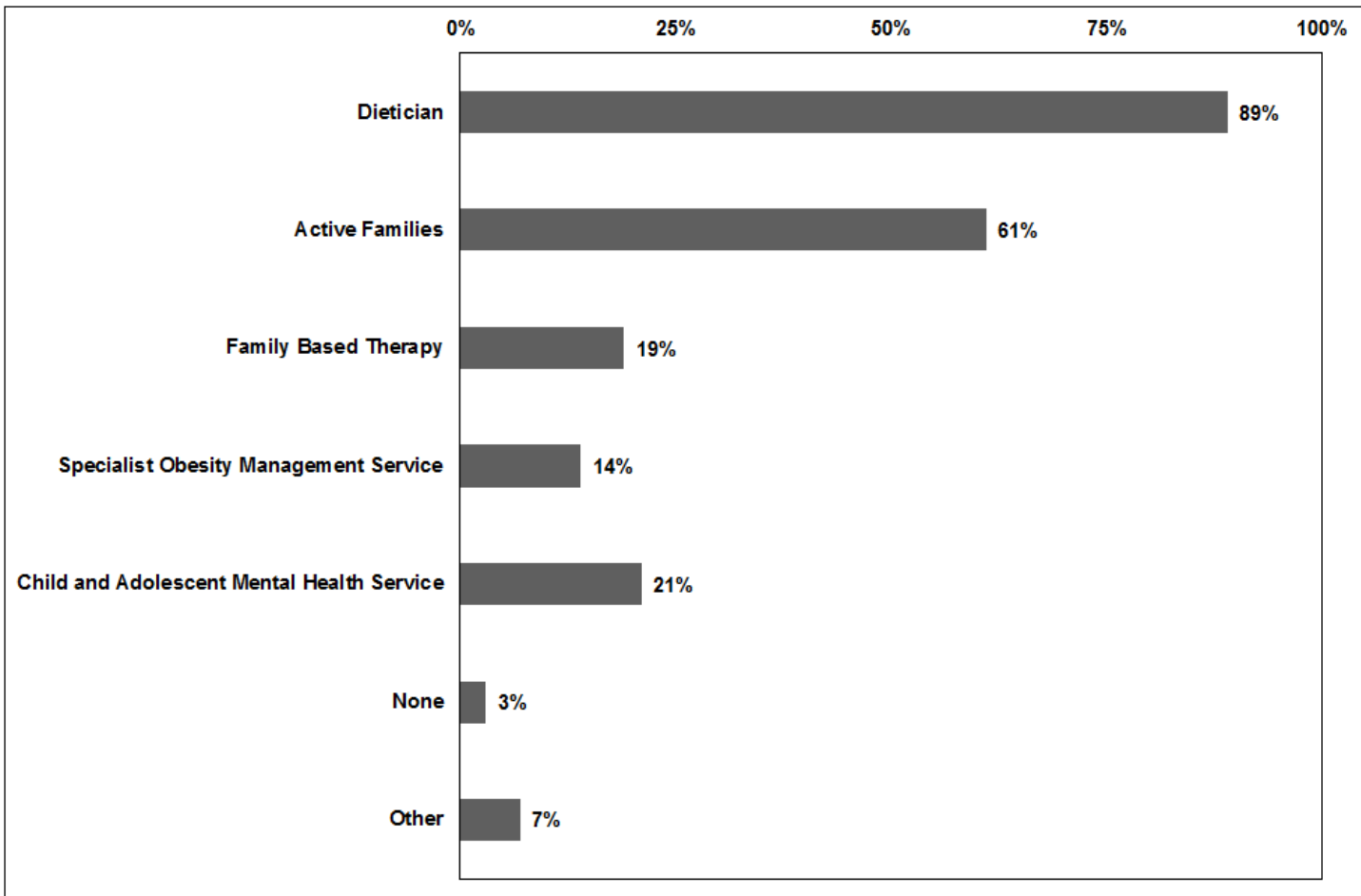
Raising
Healthy Kids



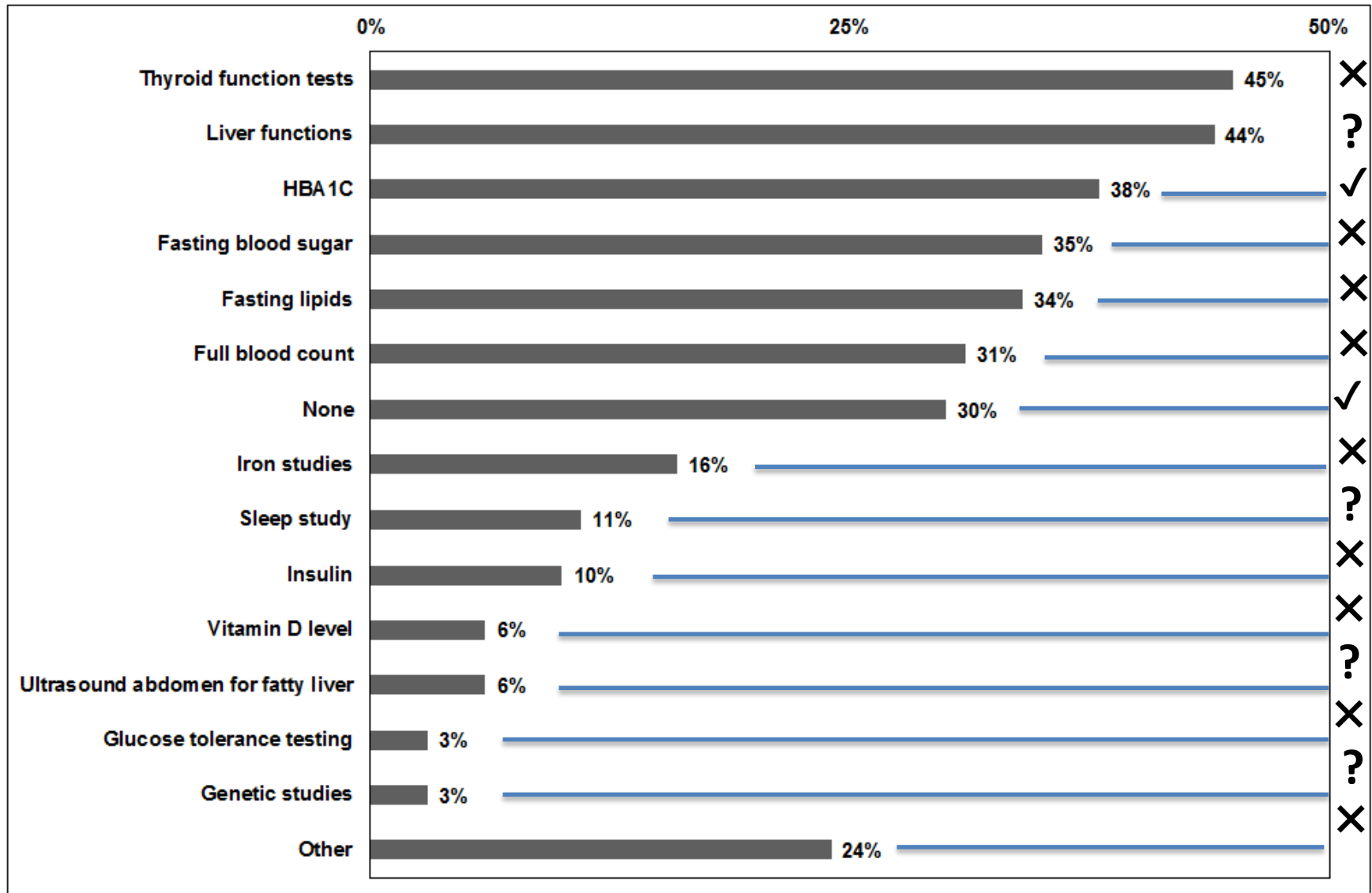
Growth charts used by GPs



Current GP referrals for obese children



GP survey – Investigations in obese children



Suggestions for assessment and management of obese children

Raising
Healthy Kids



1 MONITOR

Monitor growth.

Regularly measure height and weight to calculate Body Mass Index (BMI). Use New Zealand – World Health Organization age- and sex-specific growth charts.

Overweight

Obese

above
91st
centile

above
98th
centile

If trending towards overweight, provide the family or whānau with brief nutrition and physical activity advice.

If overweight or obese discuss long-term health risks with the family or whānau.

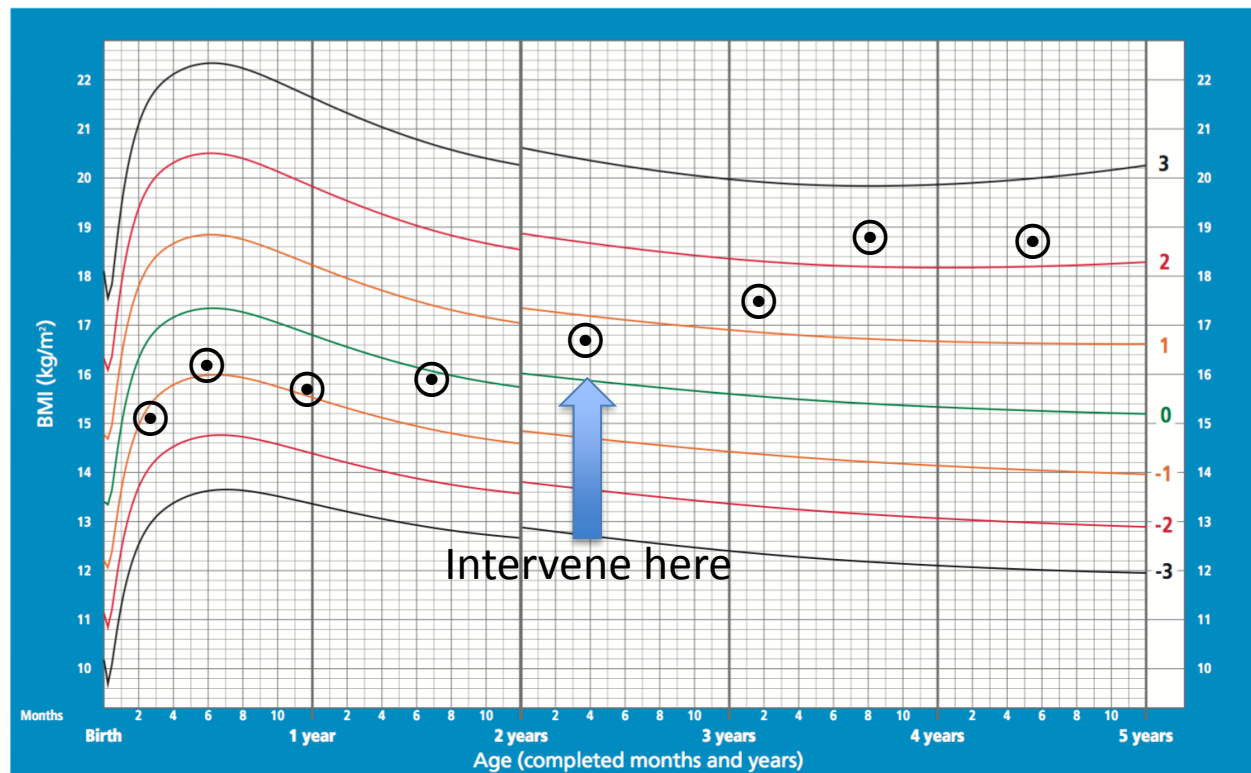
Proceed to stage 2:
Assess



Monitor Growth

BMI-for-age BOYS

Birth to 5 years (z-scores)



WHO Child Growth Standards

Raising
Healthy Kids



2 ASSESS

Take a full history for BMI above 91st centile.

Consider:

- co-morbidities
- family history of obesity, early cardiovascular disease, or dyslipidaemia
- precipitating events and actions already taken
- usual diet and levels of physical activity and sleep patterns
- current physical and social consequences of overweight
- signs of endocrine, genetic or psychological causes
- medications that may contribute to weight gain.

Include in a clinical examination:

- blood pressure with appropriate cuff size
- skin: intertrigo, cellulitis, carbuncles
- hepatomegaly
- enlarged tonsils
- assessment of short stature/poor linear growth
- abnormal gait, flat feet, lower leg bowing or problems with hips or knees
- dysmorphic features
- undescended testicle (boys).



Consider further investigations for BMI above 98th centile:

- lipid profile
- HbA1c
- overnight sleep study, using pulse oximetry if history suggests sleep apnoea.



Assess

Cardio-metabolic

- Pre(hypertension)
- Dyslipidemia/Fatty liver
- Pre-diabetes

Orthopedic

- Hips and knees

Skin

- Mechanical/hygiene effects
- Acanthosis nigricans



Respiratory

- Asthma
- Obstructive sleep apnoea

Endocrine/Genetic

- Short stature
- Dysmorphic features
- Developmental delay



3 MANAGE

Aim to slow weight gain so the child can grow into their weight.

Use the Food, Activity (including sleep) and Behaviour (FAB) change approach to address lifestyle interventions.



Food/nutritionally balanced diet



Physical activity and reduce sedentary time



Sufficient sleep



Behaviour strategies.

To support meaningful engagement and improved health outcomes, it is important that a mutually agreed weight management plan takes into account the broader social, environmental and cultural contexts of the child, family and whānau.

Refer to paediatric services if significant co-morbidities are identified or if an endocrine or genetic cause for obesity is suspected.

Agree a plan for review and monitoring.



Manage

Food

- Nutritionally balanced diet
- Sufficient calories for linear growth
- Family meals
- Slower eating
- Avoid snacking

Activity and sleep

- Play and physical activity
- Reduce screen time (esp TV)
- Sleep time
 - Infants 12-15
 - Toddlers 11-14
 - Preschoolers 10-13

Behaviour

- Active Families
- Behavioural strategies (? Triple P)
- BeSmarter resource (Wai-kids)



4 MAINTAIN

Maintain contact and support and continue to monitor the child's height and weight to ensure they are adequately supported.

Reinforce healthy eating, physical activity, behaviour strategies and sleep advice.

Identify and promote local support services. Develop collaborative partnerships with Māori health providers, Pacific health providers, Whānau Ora providers and other community-based organisations as appropriate.



Maintain

Review opportunistically

Address comorbidities

Accept setbacks – maintain positivity

Encourage family activities and sport

Link with local Regional Sports trust

Encourage cultural initiatives

e.g. Kapa-Haka

Support communities

Healthy Families NZ

Iron Maori

Community gardens/Kai Atua

Raising
Healthy Kids

