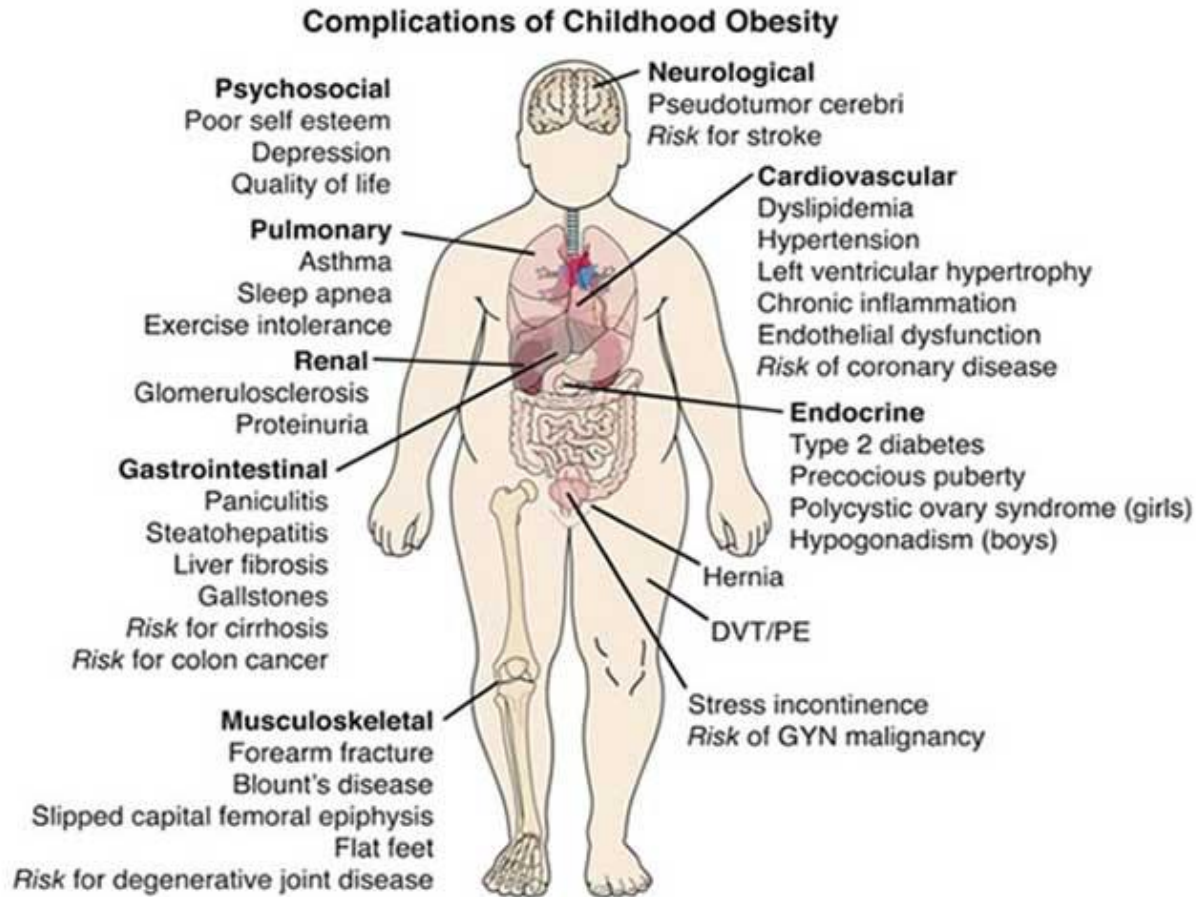


# Childhood Obesity

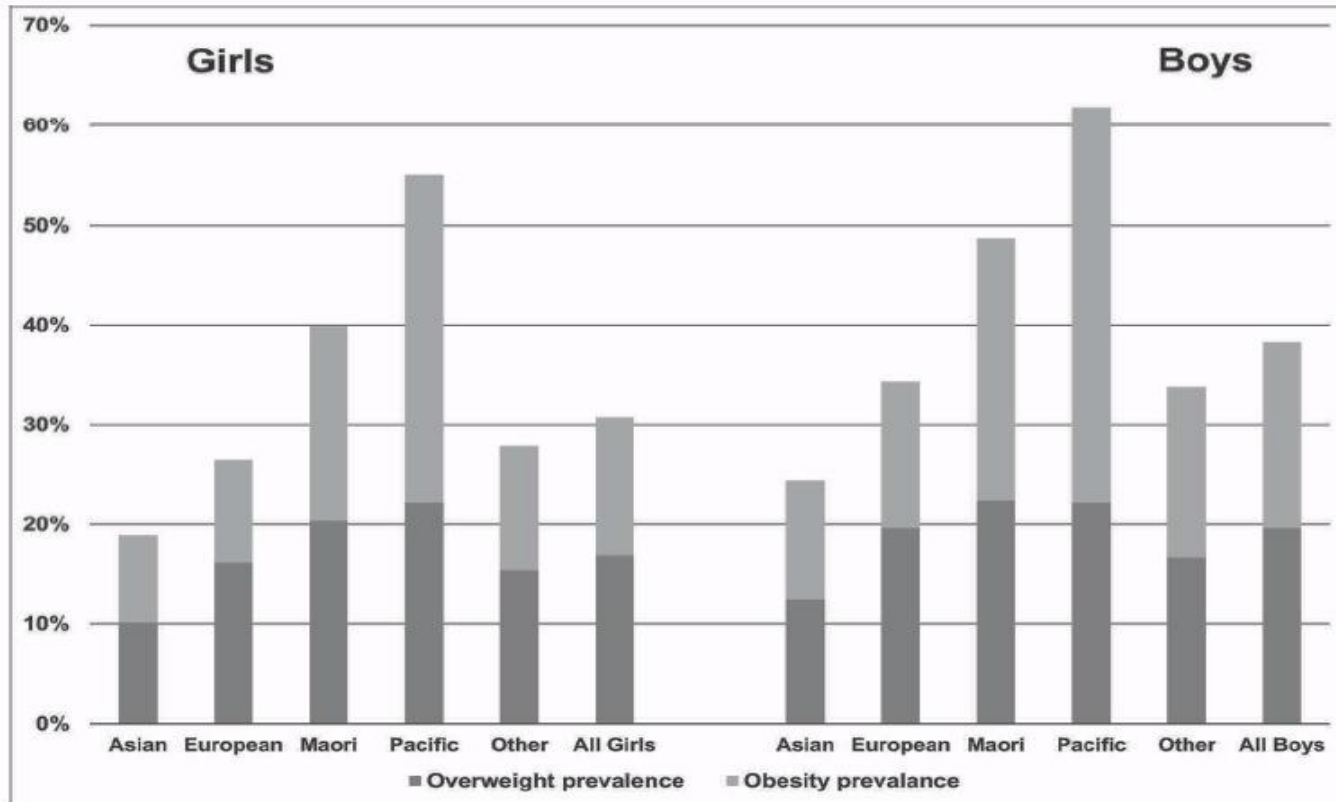
Where are we at and what are the next steps for primary care?



# Child obesity has significant health risks



# Raised BMI by Ethnicity (B4SC data 2009-13)



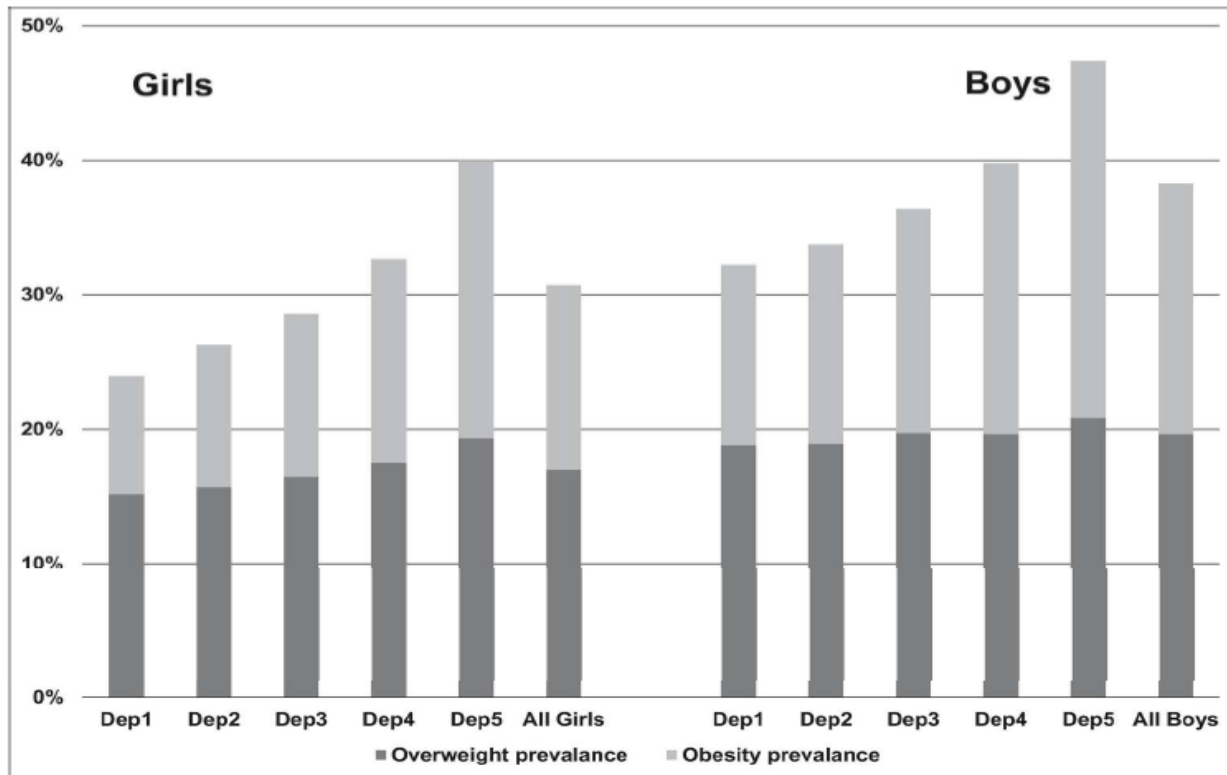
Overweight and obesity prevalence rates by gender and ethnicity (WHO2006 reference standards)

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# Raised BMI by Dep Index

## (B4SC data 2009-13)

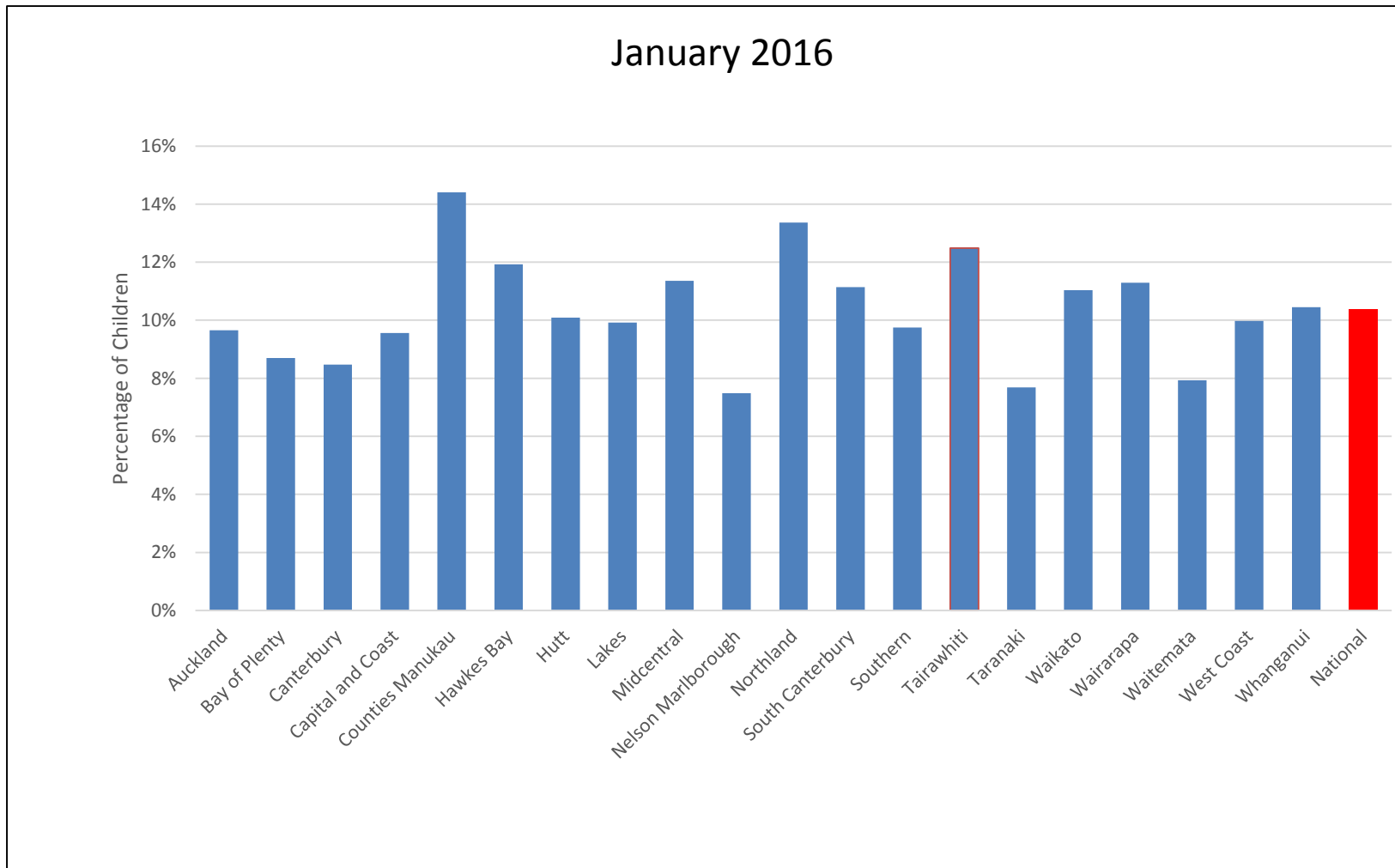


Overweight and obesity prevalence rates by gender and deprivation quintile (WHO2006 reference standards)

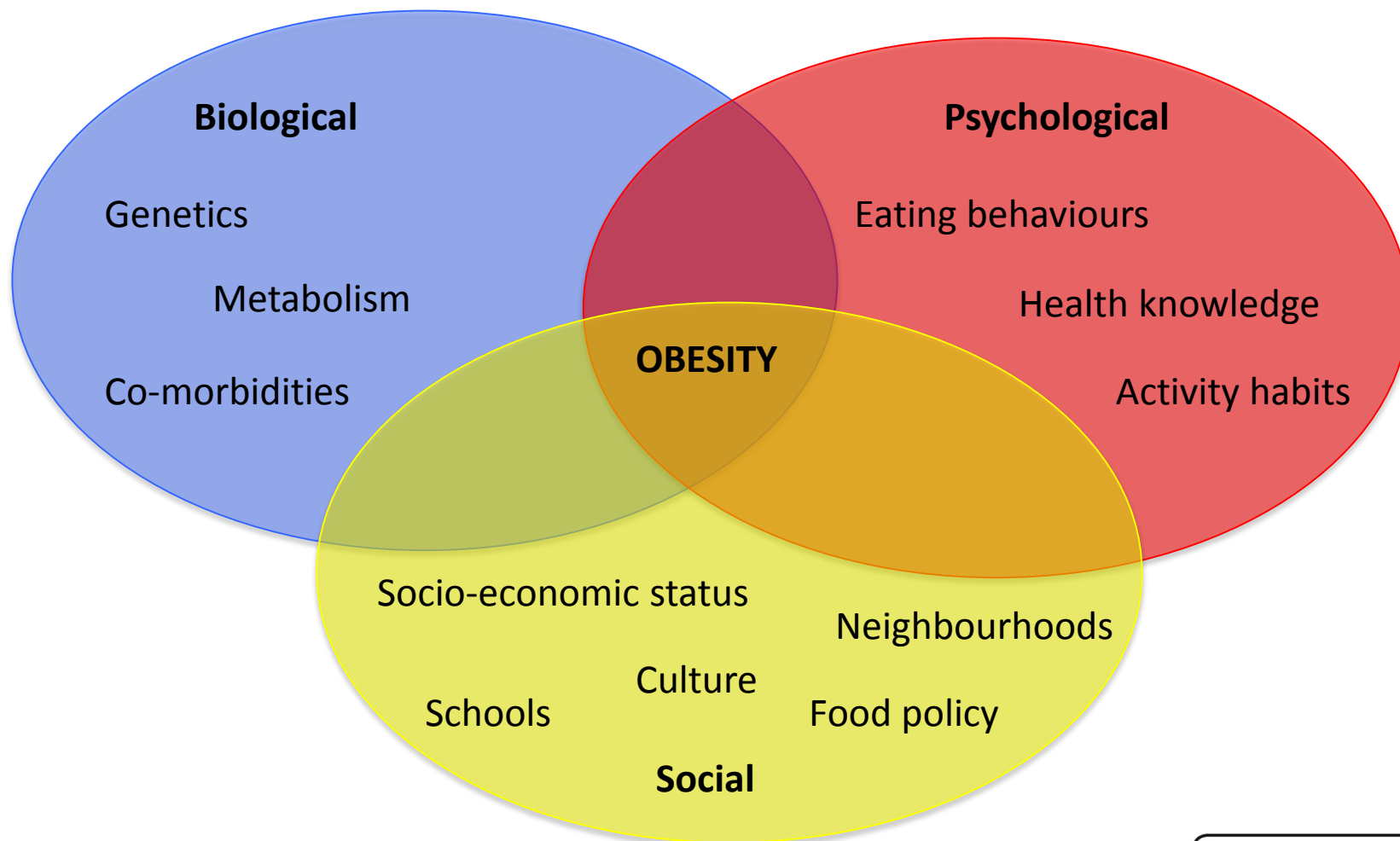
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# Prevalence of obesity at the B4SC by DHB



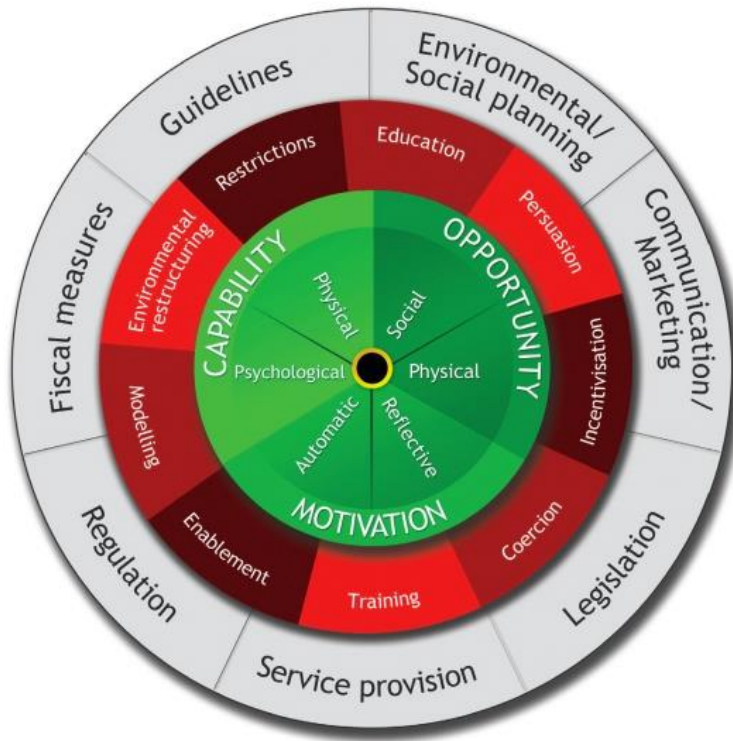
# Obesity: a biopsychosocial model



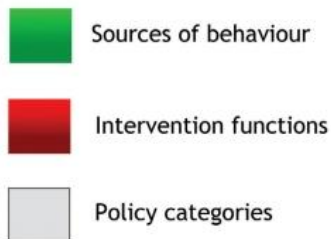
# Tackling Childhood Obesity

- No single intervention – need to address the obesogenic environment as well as a life-course approach.
- Three critical time periods in the life-course:
  - preconception and pregnancy
  - infancy and early childhood
  - older childhood and adolescence.

# Changing Behaviour

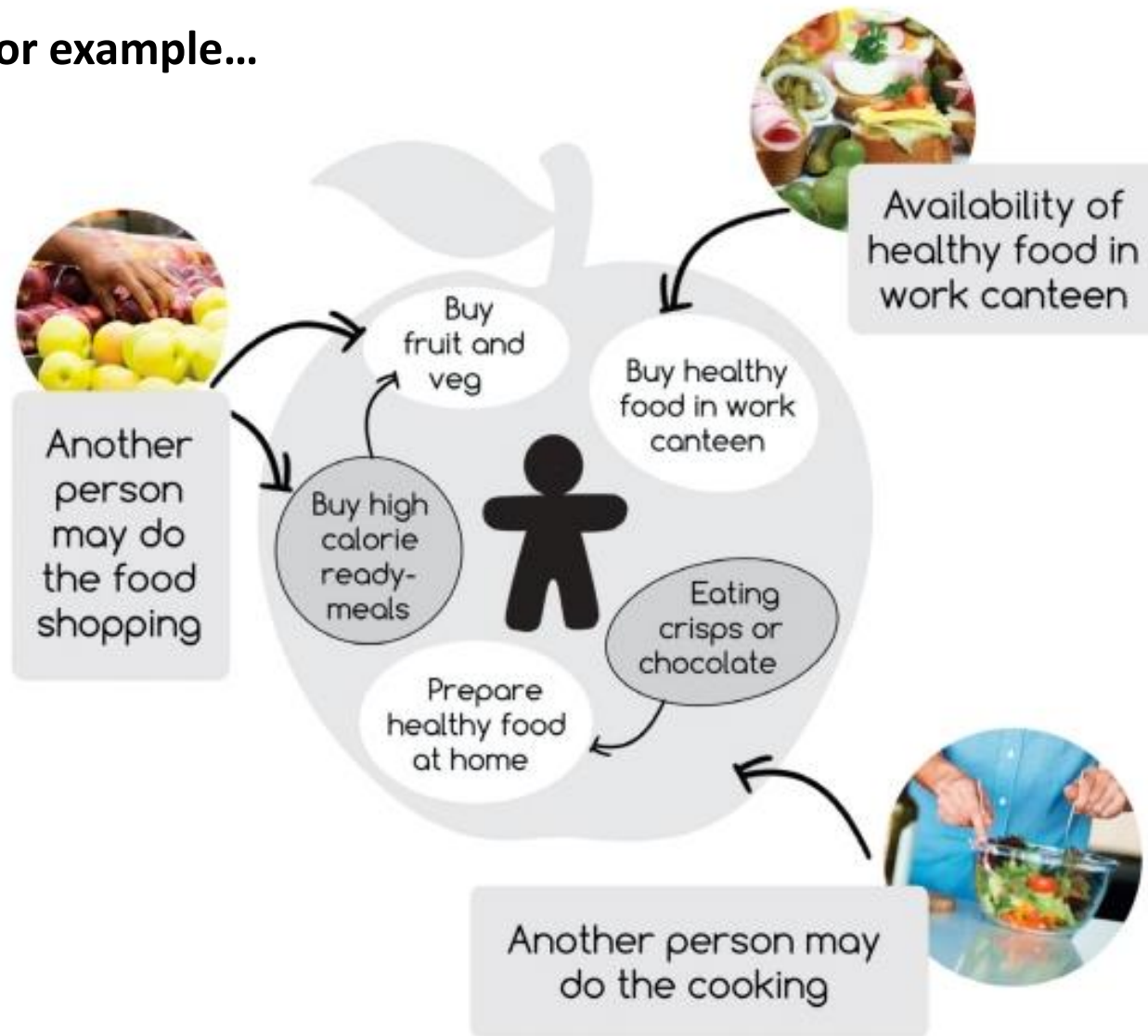


- Behaviours are part of a system – they do not occur in isolation





For example...

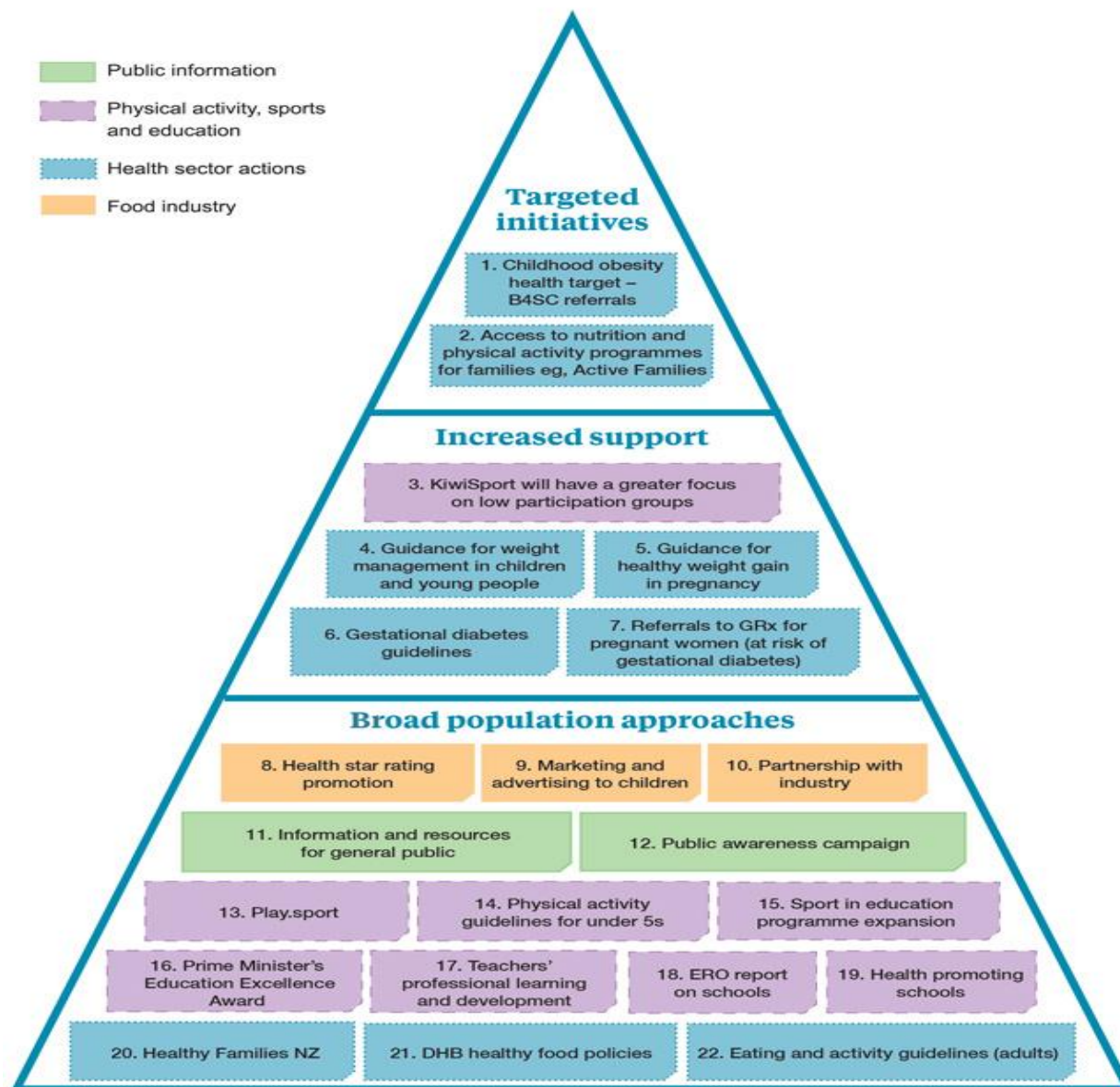


# Childhood obesity plan overview

- 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

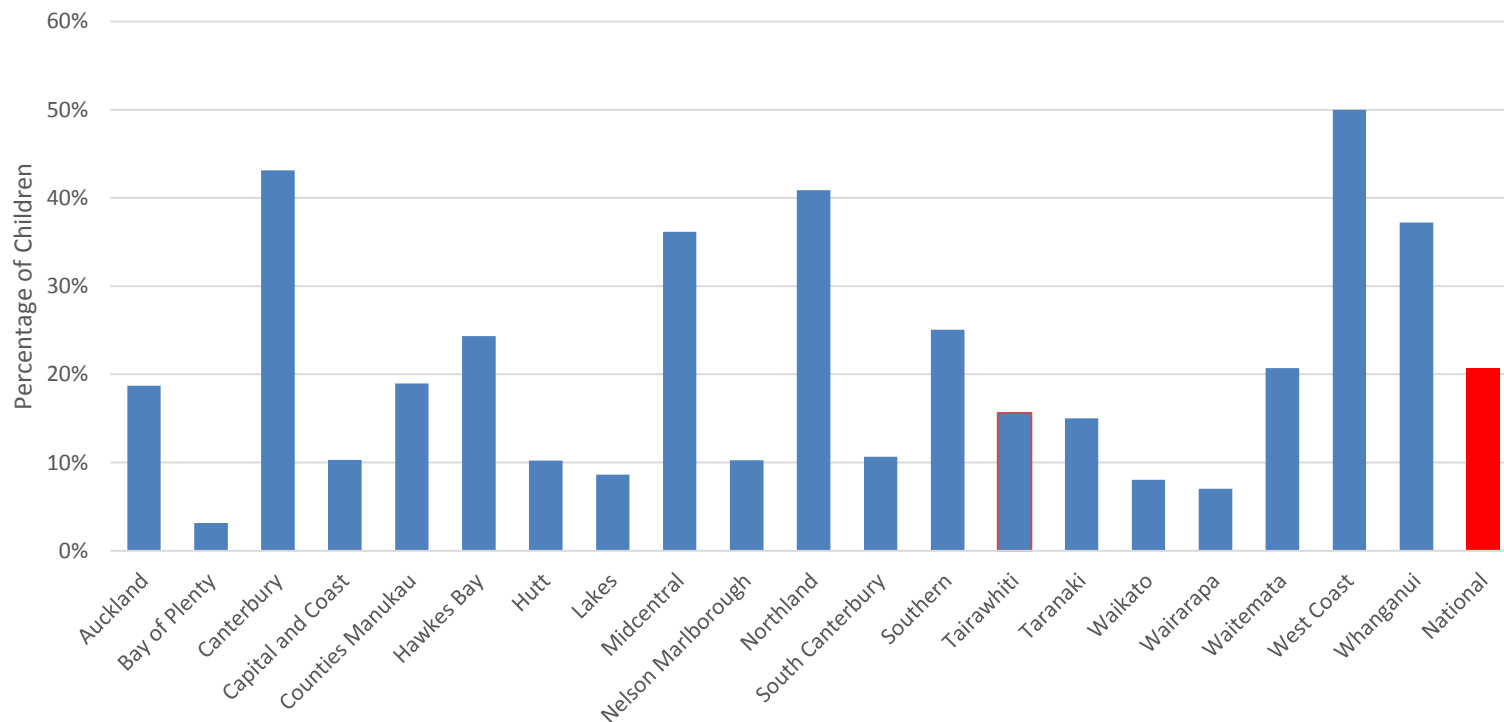


# Childhood obesity health target – Raising Healthy Kids

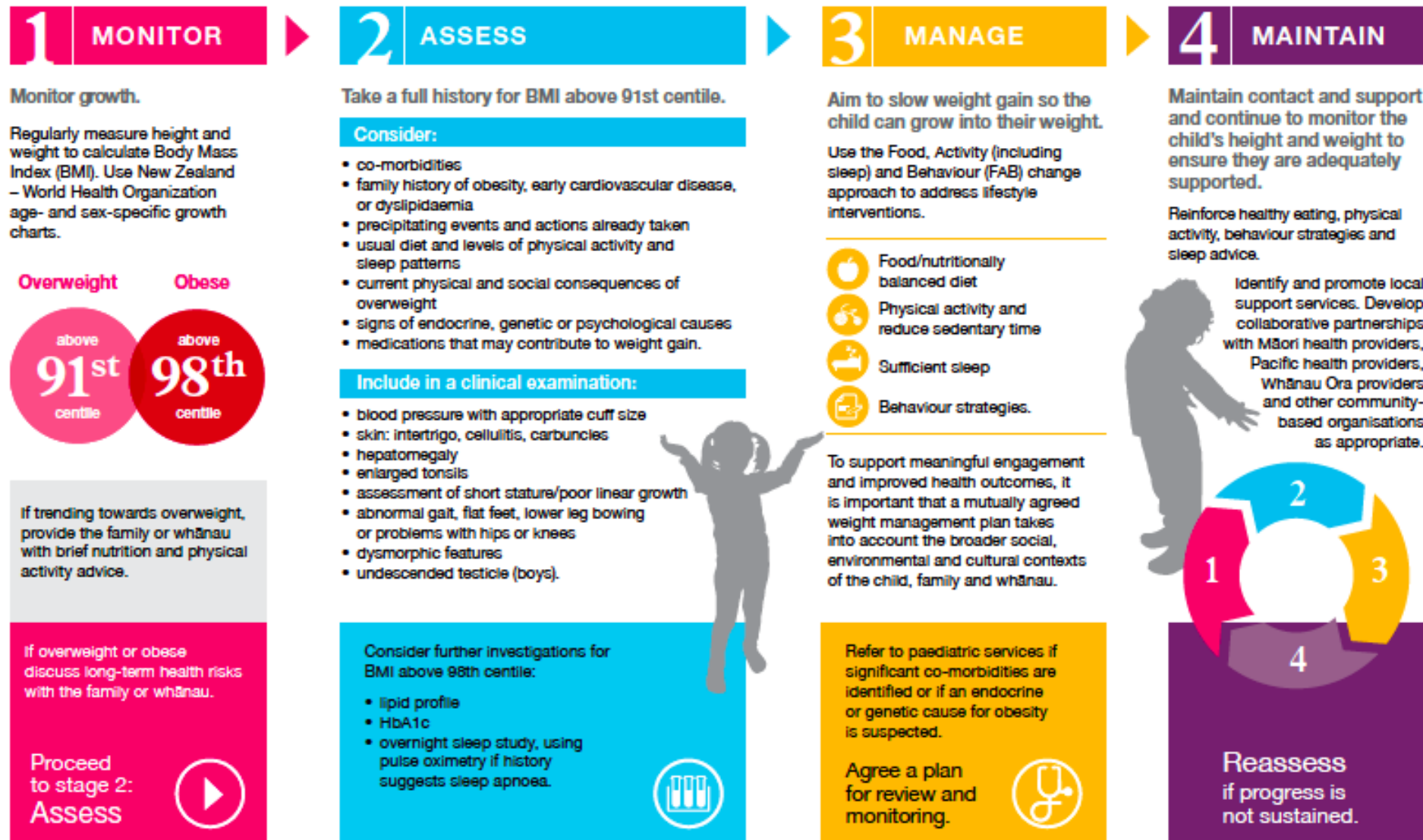
- A new health target has been implemented from 1 July 2016:
  - By December 2017, 95% of obese children identified in the Before School Check (B4SC) programme will be offered a referral to a health professional for clinical assessment and family based nutrition, activity and lifestyle interventions.
- 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 98<sup>th</sup> centile on the NZ-WHO growth chart.



# Obese children referred to services January 2016



# Weight management IN 2-5 YEAR OLDS





# 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



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

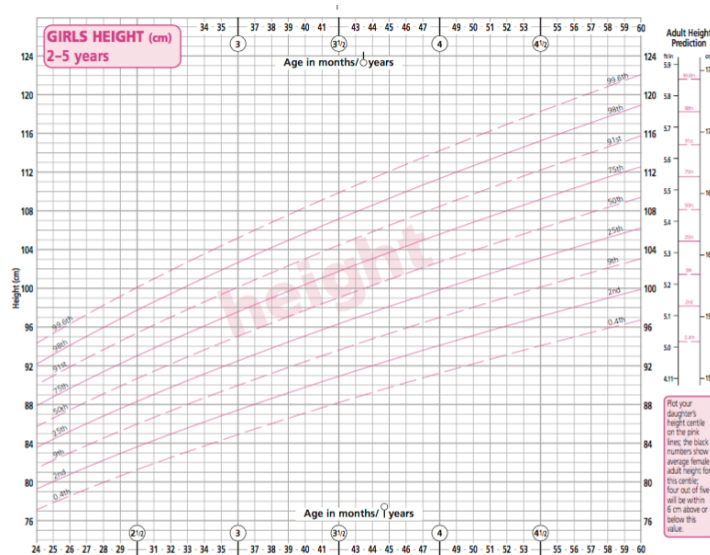
If overweight or obese discuss long-term health risks with the family or whānau.

Proceed to stage 2:  
**Assess**



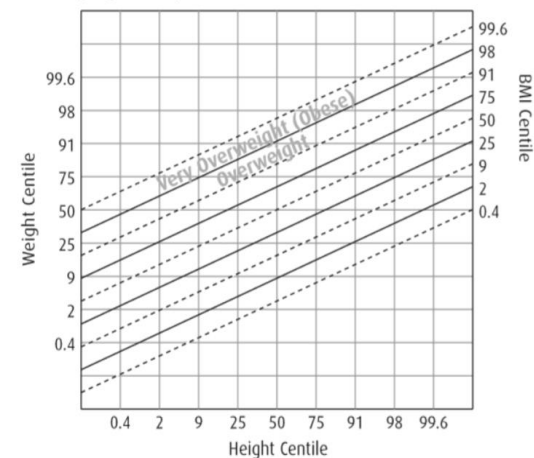
# Monitor Growth

## NZ-WHO Growth Charts



## Weight-height to BMI conversion chart

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



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# Why measure and monitor growth?

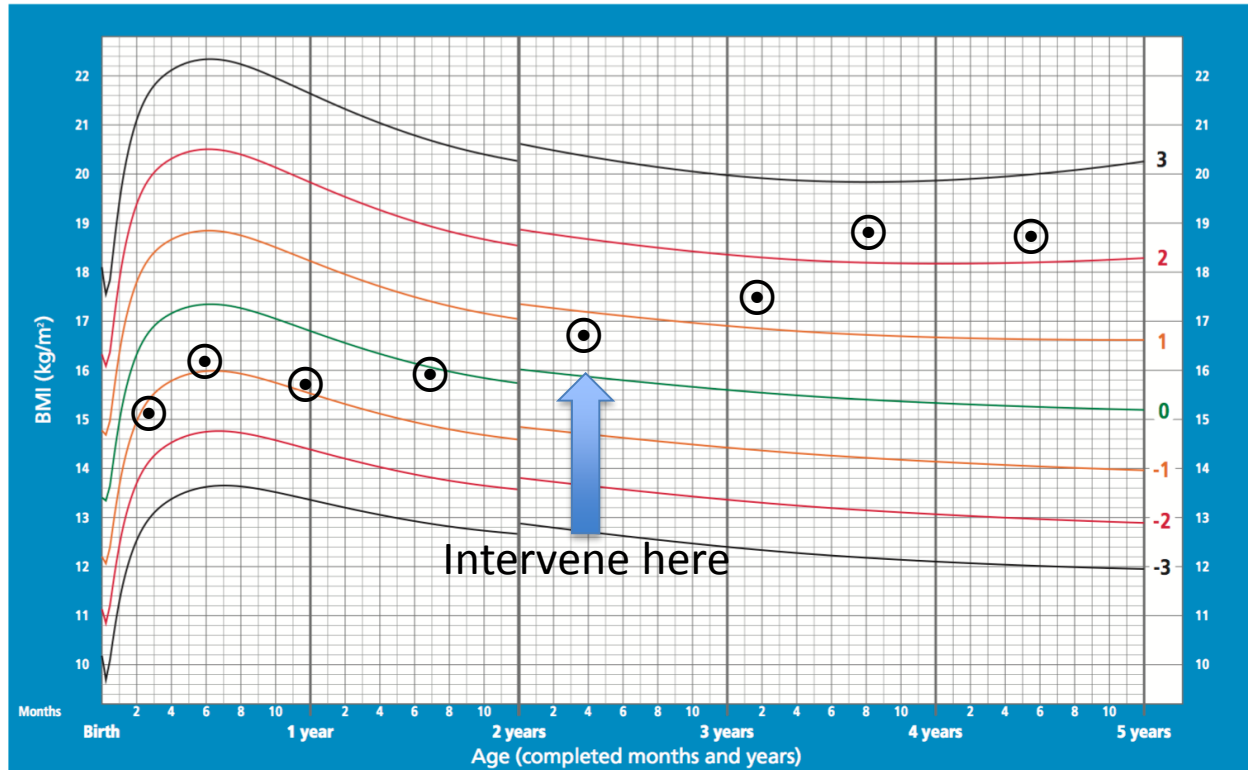
- Growth is a marker of health in children
- Serial measurements of height, weight (and head circumference) as a child ages, are sensitive measures of their general health
- Growth surveillance assists parents and health professionals to
  - Identify when things are going wrong (failure to thrive or emerging obesity)
  - Guides intervention and progress



# Intervene Early

## BMI-for-age BOYS

Birth to 5 years (z-scores)



- Don't wait for a child to attain a BMI in the obese range before offering support
- A change of centile channel is an indicator that the child's growth trajectory needs to be watched and an early intervention is likely to be more straightforward and effective

Z score (SD): +1.3      91<sup>st</sup> Centile  
+2.0      98<sup>th</sup> Centile

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## 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
- Appropriate portion sizes
- 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

## Behavioural strategies

- Change what is available at home
- Keep 'treats' out of site
- Increase easy accessibility to healthy options



# Portion Sizes

- Larger serving sizes increase intake, because they influence consumption norms and decrease the accuracy of consumption monitoring
- Recommend to families that they decrease the size of the main dish, serving dishes, and glasses for calorie-dense foods and increase these for lower-calorie foods
- Note that pre-packaged food often contains more than a single serve
- Suggest not eating directly from the packet

# How much do they need?



- **Preschoolers (2-5 yrs):** At least 2 servings of vegetables and 2 servings of fruit each day.
- **Schoolchildren (5–12 yrs):** At least 3 servings of vegetables and 2 servings of fruit each day.



## *What is one serving?*

### **Vegetables**

- 1 medium potato, taro or kūmara (135 g)
- ½ cup of cooked vegetables (50–80 g)
- ½ cup of salad (60 g)
- 1 tomato (80 g)

### **Fruits**

- 1 apple, pear, banana or orange\* (130 g)
- 2 small apricots or plums (100 g)
- ½ cup of fresh fruit salad (120 g)
- ½ cup of stewed or canned fruit (135 g)

\* Some raw vegetables and fruit may be too hard for young children to chew and grind up well. See page 11 for more information.



# Behavioral strategies (food)

- Treats for special occasions should be bought immediately prior and removed immediately after (reduces temptation)
- Healthy alternatives (e.g. water bottles/jugs, vegetable and other low calorie snacks) should be readily available and easy to find
- Healthier, low-calorie items should be at the front of the refrigerator and pantry, and high calorie items should be placed in the back
- If high calorie foods remain in the home, repackage them to make them less visible and more forgettable.



# Behavioural strategies (activity)

- Removing the television and other media from the child's bedroom and where meals are consumed





# Encourage self-monitoring

- Self monitoring
  - Provides feedback on the frequency at which a target behavior occurs
  - Raises awareness of the contextual cues that relate to the target behavior
  - facilitates analysis of the target behavior, goal setting, and feedback from the goals' achievements
- Parents can partner with their kids to do this (e.g. goals around food or activity)
- Reward good behaviour (but not with food!)

# Focus on Family-Based Interventions

- A family-based intervention fits well within the paradigm of primary care practice, because usually at least 1 parent is present for visits
- Parents and other family members should be strongly encouraged to implement the same changes as the child and model healthier behaviors as a family
- Remember – **grandparents** may be involved in child care and can have a large influence on child-rearing practices



# Parent only interventions for Children



Cochrane Database of Systematic Reviews

Loveman et al. Parent-only interventions for childhood overweight or obesity in children aged 5 to 11 years.

Cochrane Database of Systematic Reviews 2015, Issue 12. Art. No.: CD012008.

## Authors' conclusions

- Parent-only interventions may be an effective treatment option for overweight or obese children aged 5 to 11 years when compared with waiting list controls.



# Parenting Skills?

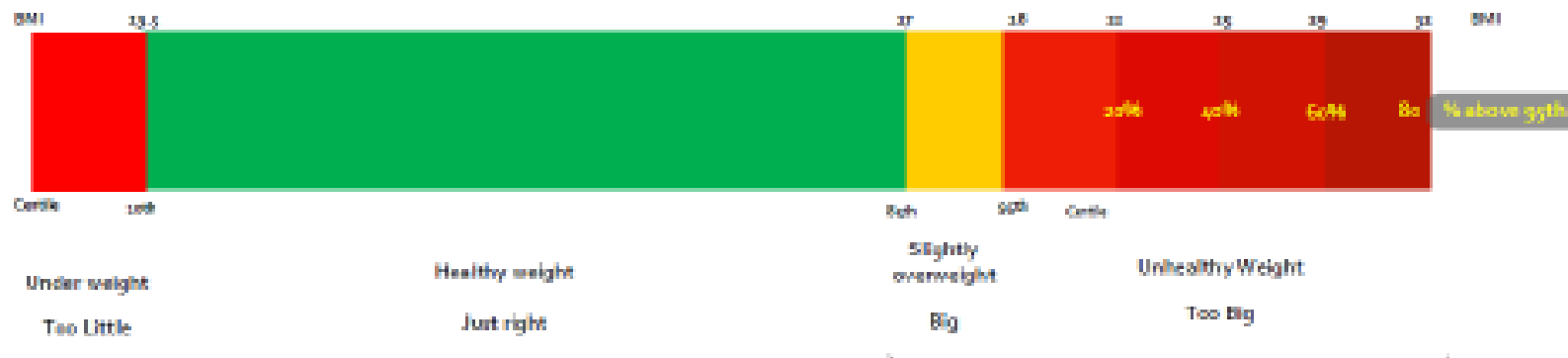
- Assist families in finding better ways to:
  - communicate
  - set limits
  - reward rather than punish
  - provide positive feedback
  - role-model
- Role modeling by parents cannot be overemphasized (parents who are obese are more likely to have children who are obese)



# Referral Options?

- Active families
  - Monthly home visits for up to 12 months
  - 5 –18 year olds, target age group 5 –12 years, but many regions are moving to include 4 year olds
  - Goal setting is used to increase physical activity and healthy eating
- Green prescription for adults
- Others?

# 4 Year Old Weight Ruler



See hints below

Family Habits

Fun

Family/Whanau Aims

## ☺ Sustaining Breakfast

- porridge or equivalent

## ☺ Water or Milk for drinks

- A glass of water before main meals

## ☺ Eat slowly (30 min for main meals)

- talk more and TV off for meals

## ☺ Healthy food in home

- amount appropriate for age and don't insist everything must be eaten!

- Only have healthy food in view or in cupboards

## ☺ TV/Screen time

- Less than 2 hours each day

## ☺ Sleep

- have a before sleep routine at the same time each night (teeth, bath, story, bed).

Most 4 yr olds need 10 – 13 hours

•Parents are really important in showing how to eat well and stay fit!

•Play outside – aim at least 30 min each day, some of it with Dad or Mum or other adult.

•Rewards and Comfort – but not as food

•Have family discussions on how healthy living is going

•For children, keep weight the same till they grow into it

- 
-

# Be Smarter Tool

**basics for healthy kids**

**be smarter be bodywise**

**goal sheet**

Name *Sam* Date

Goal I will have 2 or more handfuls of fruit and 3 or more handfuls of colourful vegetables 4 days per Week.

- Have fruit in my lunchbox and at snack time
- Include veg in my sandwich
- Have 2 handfuls of veg with dinner
- Prepare a veg and hummus snack

Tick your goals here:

	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Week 1	😊		😊	😊		😊	
Week 2							
Week 3							
Week 4							

**basics for healthy kids**

	Not yet	Sometimes	Mostly	Always
<b>b</b> reakfast every day				✓
<b>e</b> at 5+ a day	✓			
<b>S</b> leep 10-12 hours				✓
<b>m</b> atch servings to hand size	✓			
<b>a</b> ctivity 60 minutes daily		✓		
<b>r</b> educe sugary drinks			✓	
<b>t</b> akeaways less than once a week			✓	
<b>e</b> at together as a family				✓
<b>r</b> educe screen time < 2 hours	✓			

Waikids







Kids enter as a class. Get a pedometer. 'Walk around the world'

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## 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



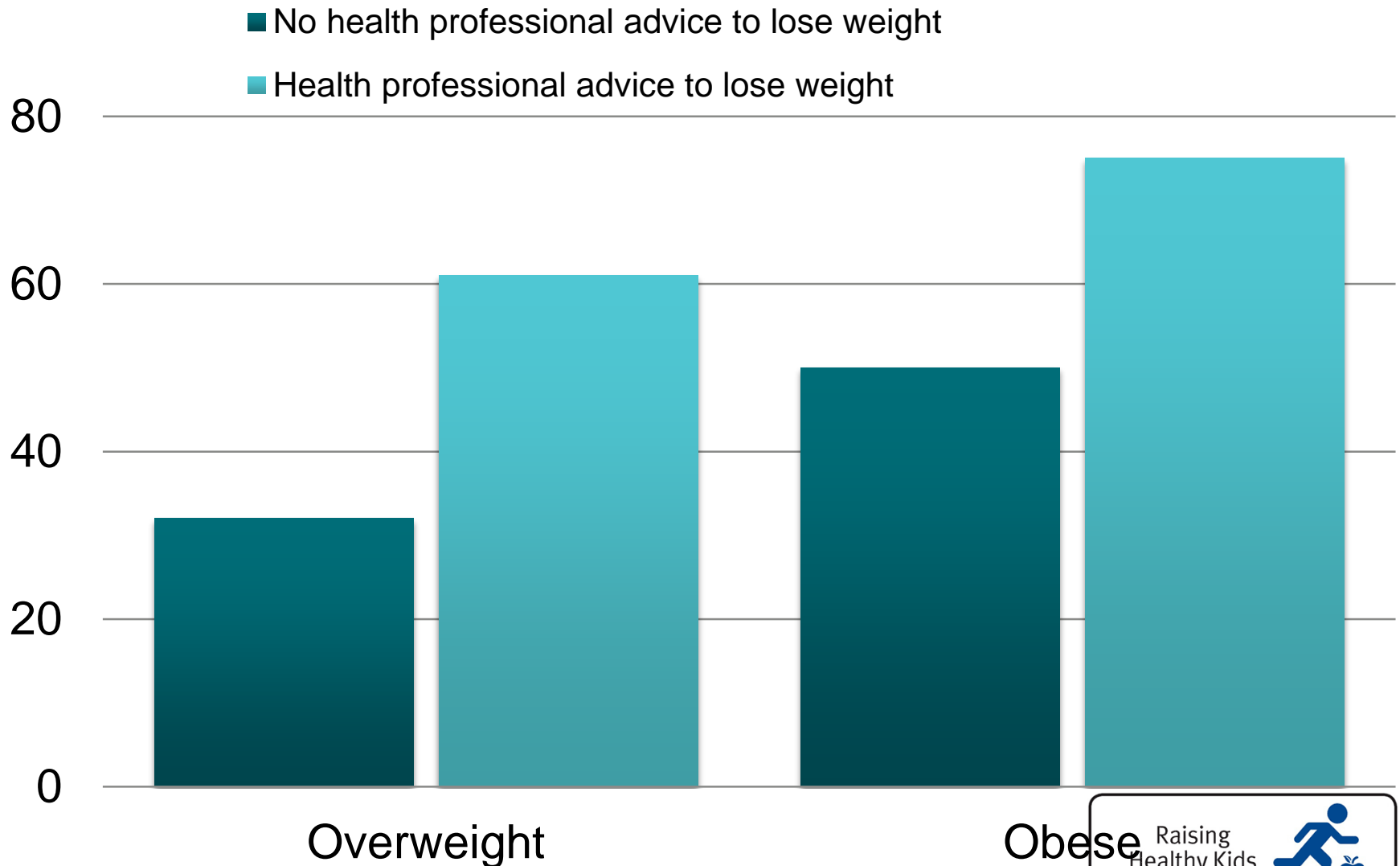
## On a related topic – Adult Obesity

- Don't ignore the issue
- Motivate a weight loss attempt
- Healthcare professional advice to lose weight was associated with increased odds of
  - Wanting to weigh less (OR=3.71; 95% CI: 2.10-6.55)
  - Attempting to lose weight (OR=3.53; 95% CI: 2.44-5.10)



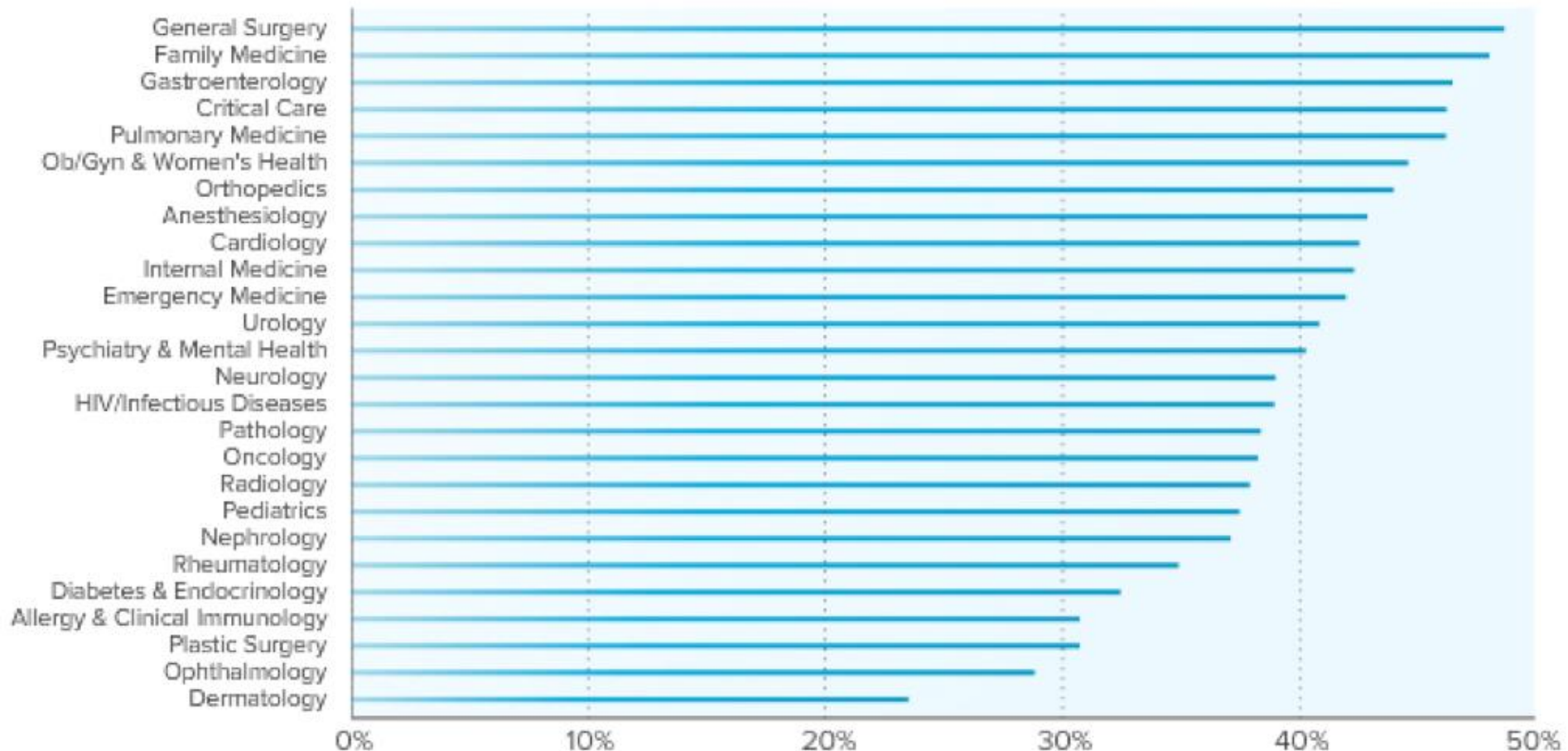
**"Lose some weight, quit smoking, move around more, and eat the carrot."**

# Percentage of patients attempting to lose weight



# Overweight healthcare professionals?

## Which Physicians Are the Most Overweight?



# What do patients think?

- Survey of 600 overweight or obese adults

Patients estimation of doctors weight	Normal (n=118)	Overweight (n=312)	Obese (n=170)
Trust* advice on weight control	76%	85%	85%
Trust advice on diet	77%	87%**	82%
Trust advice on physical activity	79%	86%	80%

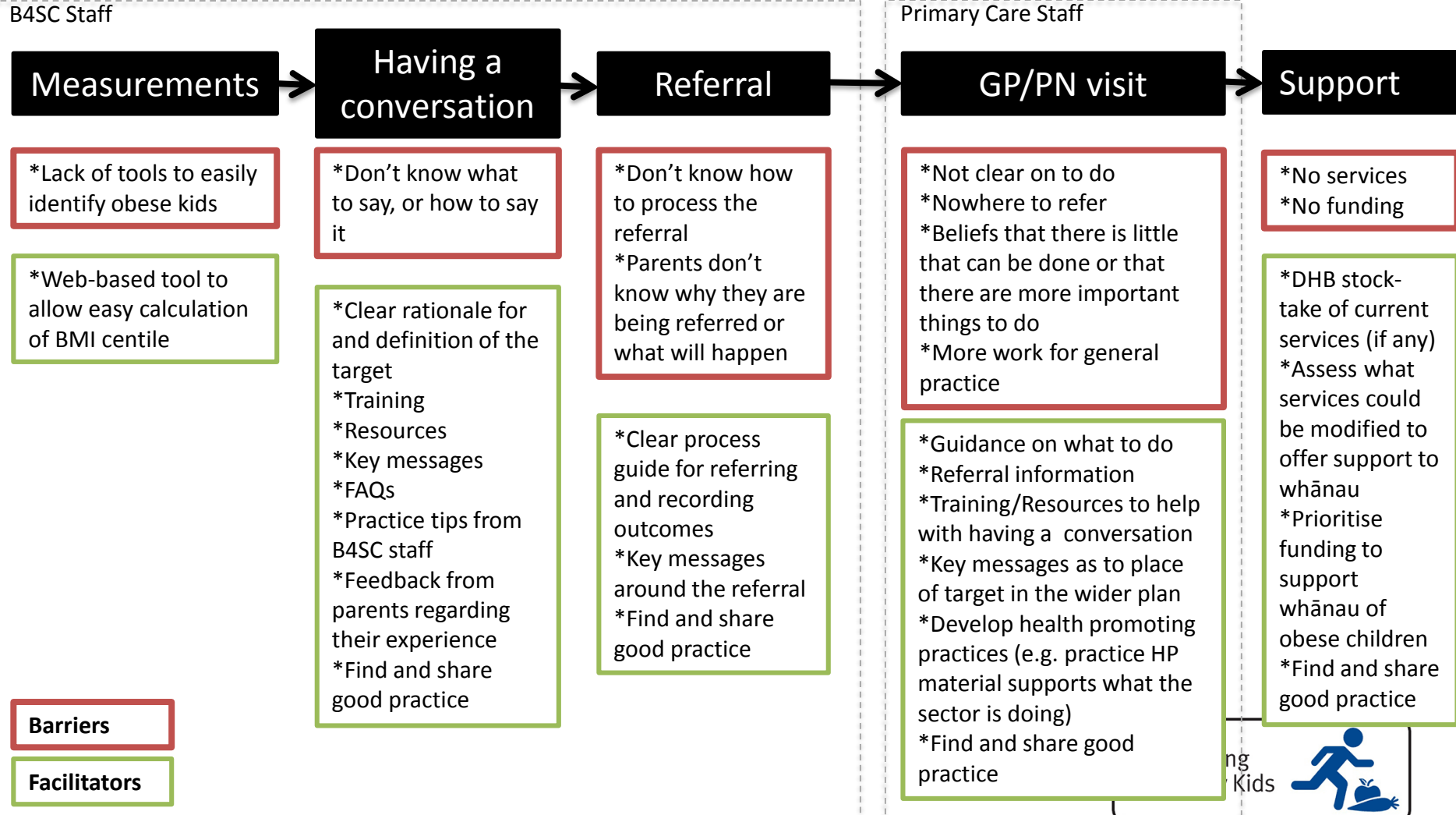
\* Rated 'a great deal' or 'a good amount' of trust

\*\*Significantly greater than normal weight (p=0.04)

# Raising Healthy Kids

## Potential barriers & facilitators at each stage of the whānau journey

% parents declining a referral and % attending the GP visit will give some indication of the effectiveness of the conversation



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