



## Guideline for the ongoing follow-up of children and adolescents with weight issues in Taranaki

**\*Please assess clinically 6 monthly (including BP, review of tonsils, progression of acanthosis nigricans if present, menstrual history where applicable), and provide nutrition and physical activity advice and support (do not forget psychological health and well-being). The following blood tests are recommended annually in most cases:**

**HbA1c, fasting glucose, fasting lipids and liver function tests.**

### Insulin resistance

- The majority of children will have documented insulin resistance (insulin  $>80\text{pmol/L}$ ), increasing their likelihood of cardiovascular and metabolic co-morbidities. **This does not need to be rechecked.**

### Type II Diabetes risk

- Please assess HbA1c and fasting glucose annually, or more 6 monthly if already identified as a concern.  
If fasting glucose not  $\geq 7\text{mmol/L}$ , and HbA1c not  $>42\text{mmol/mol}$  ( $>6\%$ ), then does not have T2DM.  
If HbA1c  $48\text{mmol/mol}$  ( $>6.5\%$ ), or fasting glucose  $\geq 7\text{mmol/L}$  or if random glucose  $\geq 11.1\text{mmol/L}$  then has T2DM.  
**PLEASE REFER TO PAEDIATRICIANS IF  $<16$  YEARS OF AGE.**

If HbA1c between  $42\text{--}48\text{mmol/mol}$  ( $6\text{--}6.5\%$ ), or fasting glucose  $6\text{--}7\text{mmol/L}$  = **impaired fasting glucose**. Please review HbA1c and fasting glucose 6 monthly.

### Abnormal lipids

- **Hypercholesterolaemia** = a fasting cholesterol  $>5\text{mmol/L}$ , cholesterol/HDL ratio  $>4.5$ , AND HDL  $<1\text{mmol/L}$ . For ones with some not all of these abnormal = **abnormal fasting lipids**. Both of these groups currently need to be managed with dietary advice, not statins, unless ongoing increases over time (or severe familial hypercholesterolaemia which should be treated aggressively with specialist advice). If concerns, or ongoing elevation, **PLEASE REFER TO PAEDIATRICIANS IF  $<16$  YEARS OF AGE.**

### Abnormal liver function tests (LFTs)

- All those with abnormal LFTs (i.e. increased GGT, AST and ALT) are likely to have fatty liver. In most cases, ultrasound of the liver to confirm is NOT indicated, but will need repeat LFTs at 6 months instead of 12.

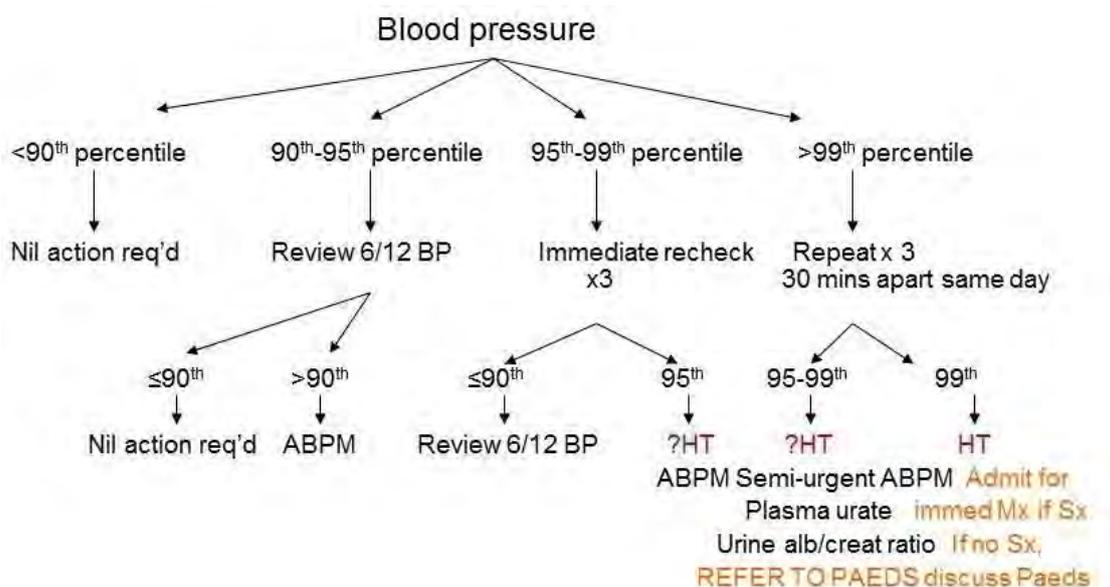
### Obstructive sleep apnoea

- Approximately 30% of obese children and adolescents will have obstructive sleep apnoea. Please ask about whether child/teen snores  $>4$  nights per

week, whether there are noticed pauses in breathing when sleeping, whether there is daytime fatigue/difficulty waking child in am, or learning difficulties (not all related to OSA in obesity, but suggestive especially if to do with attention and aggression). If any of these AND grade 3+ or 4+ tonsils on examination (Brotsky scale), needs referral to ENT. If uncertainty, **REFER TO PAEDIATRICS IF <16 YEARS** – overnight oximetry and appointment will be arranged.

### Hypertension risk

- See below table. Percentile charts are available on [http://www.adhb.govt.nz/starshipclinicalguidelines/Hypertension%20\(BP%20in%20Childhood\).htm](http://www.adhb.govt.nz/starshipclinicalguidelines/Hypertension%20(BP%20in%20Childhood).htm) (note height percentile needs to be calculated).



### Psychological issues

- Many of these children and adolescents and/or their families have psychological issues, ranging from bullying to underlying psychological diagnoses. Please include some discussion about psychological health and well-being in assessment.

### Polycystic ovarian syndrome

- Many of these young women will be experiencing menstrual irregularity. A baseline LH and FSH are useful if there is a history of hirsutism, acne, obesity and insulin resistance, as well as menstrual difficulties. It is important to ask, and reassure that this can be managed. Most of these young women are managed by Paediatrics and their GP. N.B. Check iron studies if menorrhagia.

**If any concerns and <16 years, please do not hesitate to contact the Paediatricians.**

### DISCLAIMER:

**This guideline has been written with the management of children and adolescents with weight issues as the focus, and many of these individuals have other medical conditions as well, requiring deviation from this guideline.**