Weight Management Guideline

Key Document code:	WAHT-TP-045	
Key Documents Owner:	Dr West	Consultant Paediatrician
Approved by:	Paediatric Quality Improvement meeting	
Date of Approval:	18th September 2024	
Date of review: **This is the most current version and should be used until a revised document is in place**	18th September 2027	

Key Amendments

Date	Amendment	Approved by
February 2018	Links to dietary advice sheets fixed	Paediatric QI
10th July 2019	Healthy Weight leaflet added into section D – removal of headings 'for toddlers' and 'for school aged children'	Dr J West
19th Nov 2020	Document extended for 1 year	Dr J West/Paediatric QIM
26th March 2021	Document reviewed and approved for 3 years	Paediatric Guideline Review meeting
9th March 2024	Document reviewed and amended: • Bloods • Clinic BCH	Paediatric Governance Meeting
18th September 2024	Document reviewed and amended: • CYP HW Weight Management Care Pathway • Dietary and physical activity resources updated	Paediatric Governance Meeting

Introduction

Nearly a third (30.3%) of children aged 2–15 are overweight or obese in England. The UK spends around £6 billion a year on the medical costs of conditions related to being overweight or obese and obesity increases the risk of a range of chronic conditions such as type 2 diabetes mellitus, hypertension, cardiovascular disease and bowel cancer. The following guideline advises healthcare professionals within secondary care on how to identify, assess and manage children and young people from birth to adulthood who are overweight or obese as well as signposting to local weight management programmes run throughout Worcestershire. The patient information leaflet 'Healthy Weight' can be given to families where there are concerns about a child's weight or if a family wants further information.

Identifying overweight/obese patients

- Measurement of **height and weight – plot on a WHO UK growth chart**
- Measure **BMI** if:
  - Weight > 75th centile
  - Weight centile > height centile
- Relate BMI to WHO UK **BMI charts** - age-and gender-specific (**APPENDIX A).**
  - **Alternatively use BMI centile look-up chart on back of growth chart**

Definitions

BMI ≥ 91st centile - overweight

BMI ≥ 98th centile - obese

BMI > 3.5 Standard deviations above mean – extreme obesity

Who should be seen by a Paediatrician/referred to clinic?

1) Children with BMI ≥98th centile who fulfil the following criteria:
   i) the child or family are seeking help/treatment
   ii) the child has one or more of the following risk factors for either possible underlying pathology or future morbidity:

A. Possible underlying pathology

- Relative short stature for degree of obesity
- Dysmorphic signs and/or significant learning difficulties

B. Risk for co-morbidity

- Evidence of medical co-morbidity associated with obesity (any of the following):
  - Hypertension: systolic or diastolic BP ≥98th centile for age and height
  - Obstructive Sleep Apnoea (OSA)
  - Significant mobility or joint problems
  - Abnormal glucose or insulin metabolism
  - Acanthosis nigricans
  - Dyslipidaemia
  - ALT ≥ 70 - suggestive of non-alcoholic fatty liver disease (NAFLD)
  - Features suggestive of polycystic ovarian syndrome (oligomenorrhoea, hirsutism, acne, precocious or delayed menarche)
- Evidence of psychological co-morbidity associated with obesity
- Family history of type 2 diabetes or premature cardiovascular disease in 1st or 2nd degree relatives (early onset type 2 diabetes <40 years of age, strong family history of cardiovascular disease before the age of 60)
- Black or South Asian ethnicity - increased metabolic risk

2) Any child with extreme obesity

History and examination in secondary care

1. **Accurate height, weight and calculation of BMI**
   - BMI is considered a better reference than waist circumference
2. **Pattern of obesity**: note whether generalised obesity or whether adiposity is primarily central or upper body (those with marked central adiposity may be at particular risk of adverse cardiovascular outcomes. Upper body fat, e.g. buffalo hump and neck, may be suggestive of Cushing syndrome).

3. **Blood pressure** - systolic or diastolic BP **≥98th centile for age and height (APPENDIX B)**
4. **Pubertal** assessment and menstrual history
5. **Acanthosis nigricans** - insulin resistance
6. Symptoms of **obstructive sleep apnoea (OSA)**
    - **Snoring, difficulty in breathing and pauses in breathing over 10 seconds during sleep** are the most useful questions. If present, ask parents/carers to video the snoring/pauses - this can help to guide further investigation.
    - Mouth breathing, sleeping during day, morning headaches
7. Signs of Endocrinopathy
    - Hypothyroidism as a primary cause of obesity is rare (usually present with short stature and may have immature teeth)
    - Steroid excess (e.g. Cushing syndrome) is a very rare cause of obesity. Signs include striae, hypertension, short stature, hirsutism and telangiectasia
      (NB STRIAE ALONE ARE COMMON IN OBESITY)
    - Are there features suggestive of polycystic ovarian syndrome?
      (oligomenorrhoea, hirsutism, acne, precocious/delayed menarche)
8. Mouth check - to examine the lips, tongue, soft tissues, saliva, gums and teeth. For further information please see the Mouth Care Matters website: https://mouthcarematters.hee.nhs.uk/links-resources/mini-mcm-resources-2/index.html
9. Signs of genetic obesity **syndromes**
    - Particularly note early onset obesity, learning difficulties, deafness, epilepsy, retinitis, dysmorphic features, neuro-endocrine abnormalities including hypogonadism
10. **Concomitant drug use** associated with obesity and insulin resistance:
    - glucocorticoids (oral or high dose inhaled)
    - atypical antipsychotic medications

INVESTIGATIONS

BMI > 91st centile – None if otherwise well.

BMI > 98th centile

- **Fasting bloods – Glucose, full lipid profile** (including TG and HDL cholesterol)
- **Other bloods:**
    - **HbA1c**
    - **Thyroid function (including Free T4)** should be checked as an underlying cause (although extremely rare) NB TSH is often borderline high in obese children
    - **LFT** – Raised ALT (≥ twice normal range, e.g. ≥70) is the best indicator of probable NAFLD, the hepatic manifestation of insulin resistance.

  - **Bone profile** – Ca^{2+} and PO_4 may be abnormal in rare cases of pseudohypoparathyroidism
  - **FBC, U&E, ferritin** - not specifically indicated in obesity. However, iron deficient anaemia is more common in those with disordered eating.
- **Early morning urine for albumin/creatinine ratio –** if abnormal on repeated samples, indicative of renal disease

Additional Investigations (If considered relevant)

- **Genetic studies/referral to Clinical Genetics** – if features of syndrome/developmental delay
- **Request obesity gene panel:** if extreme early onset obesity (before 5 years of age) and clinical features of genetic obesity syndromes (in particular extreme hyperphagia) and/or a family history of extreme obesity.
- **Anti-thyroid antibodies** if abnormal TFT
- **OGTT** if abnormal fasting glucose/HbA1c } Refer to Dr West
- Investigations for **polycystic ovarian syndrome (PCOS)** - suspect in girls with signs of insulin resistance (acanthosis nigricans), androgen excess (acne and hirsutism) and oligo/amenorrhoea.
  - **Adrenal androgens (androstenedione, DHEAS & testosterone), FH/LSH, 17-hydroxyprogesterone, sex hormone-binding globulin (SHBG), prolactin - IF LIMITED SAMPLE, TEST FOR TESTOSTERONE AND SHBG**
  - **If results suggestive of PCOS – request a pelvic ultrasound and refer to Miss Blackwell/Miss Ghosh's adolescent gynae clinic**
- **Overnight oximetry** – organise through Orchard if features of OSA

Management

- **Multicomponent lifestyle advice for all with BMI > 91st centile**
- **Follow-up is important to monitor progress**
- **Pharmacological management** - not generally recommended for children younger than 12 years and only to be started by a specialist MDT if other interventions failed/severe co-morbidities
- **Bariatric surgery** - not generally recommended (only consider in exceptional circumstances by MDT in specialist centre)

Lifestyle Advice for Child and Family

Before giving advice to the child and family, an assessment of their motivation to change should be made. This will help to tailor the advice to the needs and preferences of the individual and ensure realistic goals are set. These goals should be small, achievable and reviewed regularly. Advice is based around healthy eating habits, adequate amounts of physical activity and engaging the whole family which increases the chances of sustained change. Encourage parents (or carers) to take responsibility

for lifestyle changes in children who are overweight or obese, especially if they are younger than 12 years of age.

For people who are not yet ready to change, offer them the chance to return for further consultations when they are ready to discuss their weight again and willing or able to make lifestyle changes. Give them information on the benefits of losing weight, healthy eating and increased physical activity. If the child is still growing, aim to maintain their existing weight. Therefore, as they grow taller their BMI will improve. Those who are no longer growing taller will need to lose weight.

Dietary advice

- Limit their child's consumption of sugar-sweetened beverages
- Eat a diet with at least five portions of fruit and vegetables per day
- Reduce processed and ultra-processed foods
- Eat breakfast daily
- Eat meals together as a family as much as possible
- Limit eating out, especially eating at fast food restaurants
- Adjust portion sizes appropriately for age

Please see **APPENDIX C** for dietary advice leaflets/resources.

Physical Activity

- Interventions to increase physical activity should focus on activities that fit easily into people's everyday life (such as walking)
- Children capable of walking unaided should be physically active daily for at least 180 minutes, spread throughout the day
- All children should undertake a range of moderate/vigorous activity for at least 60 minutes each day
- Children aged over 5 years should undertake vigorous activities including those that strengthen muscle and bone at least 3 days per week
- Children should minimise the amount of time they spend being sedentary (being restrained or sitting) for extended periods (except sleeping)
- Parents should try to complete at least some local journeys with young children using a physically active mode of travel with the aim of establishing active travel as a life-long habit from an early age
- Reducing TV viewing and other screen time. Advise people that any strategy that reduces TV viewing and other leisure screen time may be helpful (such as TV-free days or setting a limit to watch TV for no more than 2 hours a day)

Please see **APPENDIX D** for age banded physical activity advice leaflets/resources.

Local Weight Management Programmes

Below are details of local weight management programmes. Please provide the family with a copy of the patient information leaflet.

CYP HW Weight Management Care Pathway

Aged 0-23 months

Weight crossing upwards by two or more centiles AND/OR weight two or more centiles above length centile

- **Weight <91st centile** → Offer **Universal Support**, Health Visitor, Healthy Start, Change4Life
- **Weight >91st centile** → Family Coaching Children & Families - Family Coach: Onside Advocacy South Worcestershire to follow.
- **Weight >98th centile** → Family Coaching Children & Families - Family Coach: Onside Advocacy South Worcestershire to follow. AND inform GP of referral
- **Weight >99.6th centile** → If Wyre Forest; Family Coaching Children & Families - Family Coach: Onside Advocacy, Worcestershire (onside-advocacy.org.uk) South Worcestershire to follow. AND inform GP of referral

If **Family Coaching declined** or child's needs are not met consider referral to acute Dietetics.

Aged 2-4 Years

- **BMI: 2nd - < 91st centile Healthy Weight** → Offer **Universal Support**, Health Visitor, Healthy Start,
- **BMI ≥91st centile Overweight and Ready to Change** → Family Coaching Children & Families - Family Coach: Onside Advocacy, Worcestershire (onside-advocacy.org.uk) (Wyre Forest, South Worcestershire to follow)
  Health Visitor (if 4 years old and in school: School Health Nurse)
  Refer to Starting Well Partnership for bespoke support.
- **BMI ≥98th centile Very Overweight** → Family Coaching Children & Families - Family Coach: Onside Advocacy, Worcestershire (onside-advocacy.org.uk) (Wyre Forest, South Worcestershire to follow)
  Health Visitor (if 4 years old and in school: School Health Nurse)
  Refer to Starting Well Partnership for bespoke support.
  AND inform GP of referral
- **Children under 2 years – weight > 99.6th centile and 2 centile discrepancy or more between weight and length** → Acute dietetics?

If child's needs are not met, discuss referral options to: School Nursing if aged 4 years.

Aged 5-16 Years

- **BMI: 2nd - < 91st centile Healthy Weight** → Offer **Universal Support**, Public Health School Nurse, Healthy Start if mother is pregnant, Change4Life
- **BMI ≥91st centile Overweight and Ready to Change** → Family Coaching Children & Families - Family Coach: Onside Advocacy, Worcestershire (onside-advocacy.org.uk)
  Public School Health Nurse
- **BMI ≥98sth centile Very Overweight** → Family Coaching Children & Families - Family Coach: Onside Advocacy, Worcestershire (onside-advocacy.org.uk)
  Public School Health Nurse
- **BMI ≥98sth centile with co-morbidities (mobility problems due to weight, CVD risk factors, fatty liver) OR BMI > 99.6sth** → Acute Dietetics
- **BMI > 99.6sth with co-morbidities up to 16 years only**

Safeguarding Concerns Raise with Social Care

Acute Paediatrics → CEW Clinic Birmingham

BMI centile:

CYP H&W Weight Management Tiered Provision

Tier 0 - Universal activity & healthy food initiatives/services available to children, young people and families.

- Making Every Contact Count (MECC) training delivery: training can be accessed at e-Learning for Health
- Public Health Midwives
- Breastfeeding Support / Clinics and groups
- Self-weigh clinics (parents to weigh babies in Family Hubs or libraries Baby self weigh clinics | Starting Well (startingwellworcs.nhs.uk)
- Promotional activity using national campaigns e.g. Health Matters, Start 4Life Healthier Families - Home - NHS (www.nhs.uk)
- The Daily Mile (only delivered in some schools)
- National Child Measurement Programme parents' feedback letters
- Early Years Movement Clubs
- School Games — physical activity opportunities & clubs
- School food standards School meals - food standards - GOV.UK (www.gov.uk)
- School food policies, school fruit & veg scheme.
- Free nursery milk scheme The Nursery Milk Scheme
- School milk subsidy (where schools have signed up) School milk subsidy scheme - GOV.UK (www.gov.uk)
- School breakfast clubs (for eligible schools) National school breakfast club programme - GOV.UK (www.gov.uk)

Tier 1 - Services and work that focuses on preventing obesity. Provides basic nutrition and exercise support to reduce weight and improve quality of life.

- Healthy Start Scheme (support to access free vitamins and vouchers for healthy food & milk)
- Midwives — breast feeding & nutrition support
- Health Visitors <5's—breast feeding, weaning & nutrition
- School Health Nursing Service >5's information & advice on nutrition & physical activity, NCMP, School Screener
- Special School Paediatric Nurses — provide support to families in Special Schools
- GPs
- NHS Better Health Weight Loss Plans

Tier 2 - Programmes that aim to use behaviour change theory to enable someone to reduce their energy intake and encourage them to be more physically active (multi-component lifestyle weight management approaches).

- Healthy Worcestershire service for 16 years +
- Family Coaching Service (currently Wyre Forest, South Worcestershire to follow, starting in Wychavon) Children & Families - Family Coach: Onside Advocacy, Worcestershire (onside-advocacy.org.uk)
- Community Dietetics (NHS H&W Health & Care Trust) — not a commissioned service for weight management – for avoidant restrictive food intake disorders (ARFID) only.
- GP for referral to acute paediatrics

Tier 3 - Specialist assessment and weight management services. Intensive behaviour change service for individuals suffering with complex co-morbidities and/or long term weight issues.

- Acute Paediatrics WHAT — assessment and referral for related issues: diabetes, endocrinology, genetic conditions
- Acute Paediatrics WHAT — provide referral to CEW Clinics for CYP with severe obesity & co-morbidities

NHS Birmingham Women's & Children's NHS Foundation Trust (Regional) Complex Excessive Weight (CEW) Clinics

- Referral acceptance criteria
- Up to 16 years of age
- Severe obesity – BMI >99.6th Centile
- At least one obesity related co-morbidity (hypertension, joint or mobility problems, abnormal glucose metabolism (e.g. HbA1C 40-47 mmol/mol), idiopathic intracranial hypertension, non-alcoholic fatty liver disease, sleep apnoea requiring active intervention, polycystic ovarian syndrome, dyslipidaemia, significant psychological co-morbidity)
- Referral by secondary care paediatricians (including hospital and community paediatricians) and tertiary care paediatric specialists

Tier 4 - Specialist Surgical intervention and treatments for obesity. Surgery is recommended for children and young people only in exceptional circumstances, see Obesity (NICE clinical guideline 189).

Other sources of support using online services and useful websites include:

Change4life

https://www.nhs.uk/change4life

NHS Choices

https://www.nhs.uk/live-well/

Worcestershire County Council

www.worcestershire.gov.uk

Complications of Excess Weight Service

The above service at Birmingham Children's Hospital accepts referrals from secondary/tertiary care for 1–16-year-olds with:

- BMI above +5 SD (RCPCH BMI charts) or
- BMI above +3 SD (RCPCH BMI charts) plus at least one comorbidity (see referral form).

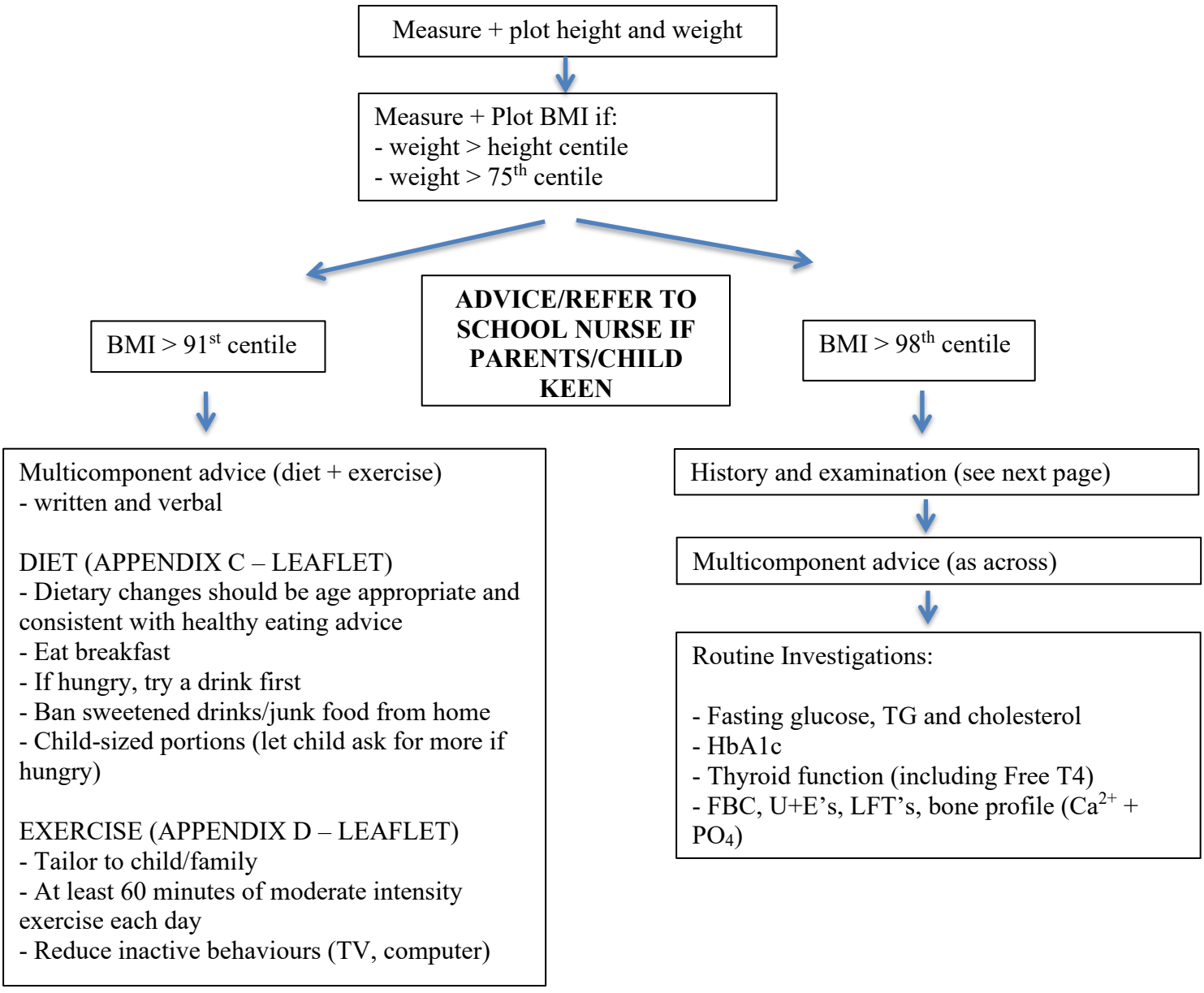
CEW referral proforma.xlsx

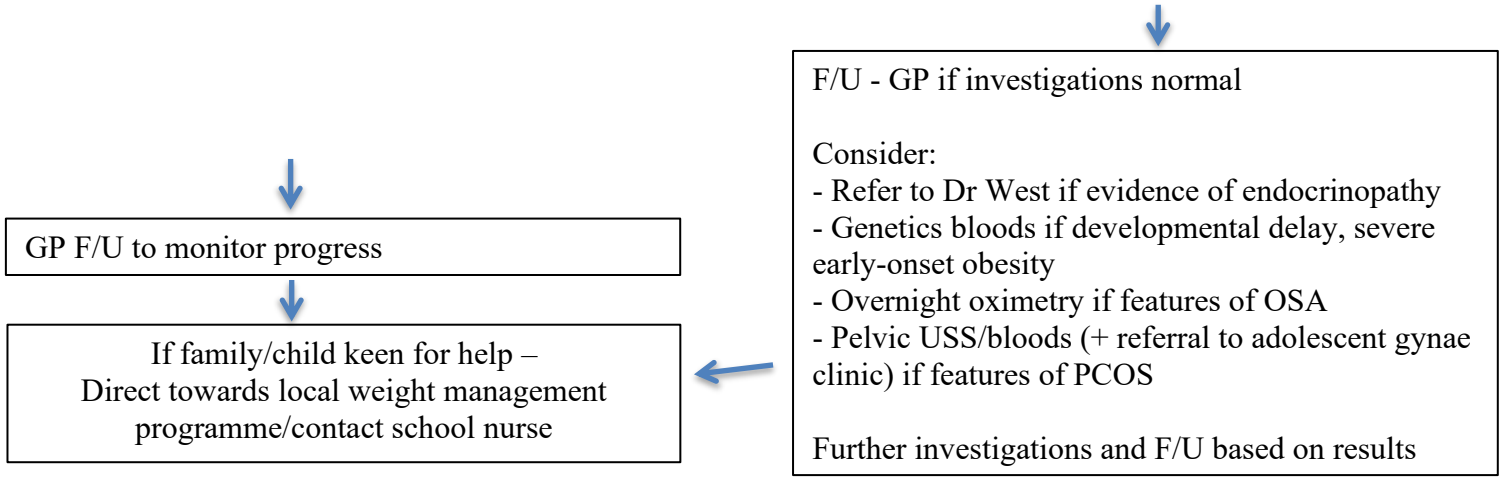
Please email a completed referral form with a formal referral letter and results of screening tests to:

bwc.westmidlandscewservice@nhs.net

Referral proforma:

CEW referral form.xlsx



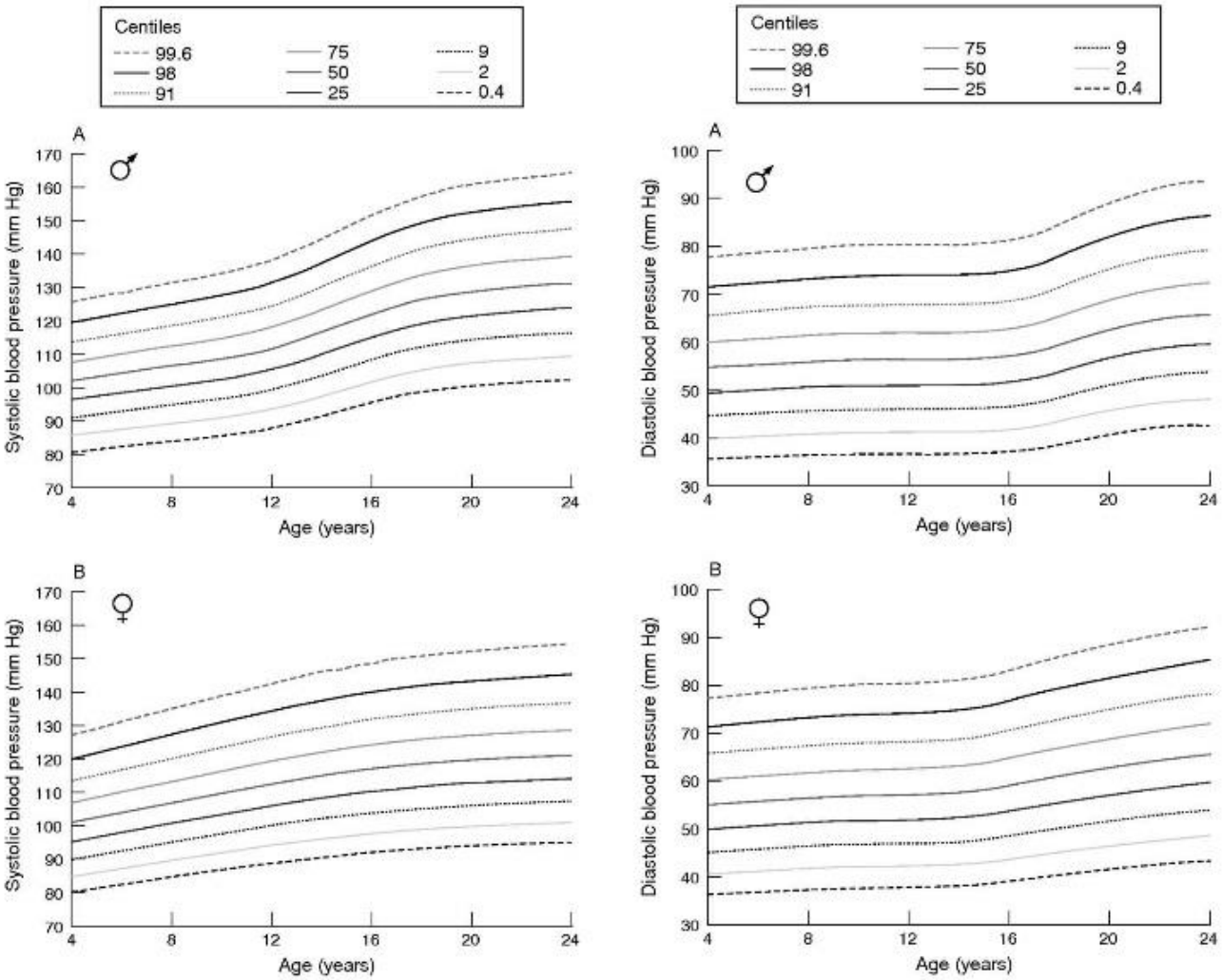


APPENDICES

A) BMI charts

https://www.rcpch.ac.uk/sites/default/files/2018-03/boys_and_girls_bmi_chart.pdf

B) BP centile charts (Jackson & Cole. Arch Dis Child 2007; 92: 298-303)



C) Dietary advice resources:

Eatwell Guide:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/746558/Eatwell_guide_colour_edition.pdf

South Asian Eatwell Guide:
https://mynutriweb.com/wp-content/uploads/2021/10/Untitled-700-x-700-px.pdf

British Heart Foundation's guide to Food Labelling
https://www.bhf.org.uk/informationsupport/support/healthy-living/healthy-eating/food-labelling

NHS Food Scanner app
https://www.nhs.uk/healthier-families/food-facts/nhs-food-scanner-app/

Processed Foods
https://www.nhs.uk/live-well/eat-well/how-to-eat-a-balanced-diet/what-are-processed-foods/

Ultra-processed foods

https://www.bhf.org.uk/informationsupport/heart-matters-magazine/news/behind-the-headlines/ultra-processed-foods

Mini Mouth Care Matters Resources
https://mouthcarematters.hee.nhs.uk/links-resources/mini-mcm-resources-2/index.html

Teeth Brushing
https://youtu.be/BapR9J86ZZw

D) Physical activity resources:

For children under 5 years' old
Physical activity for early years (birth - 5 years)

For children 5-18 years' old
Physical activity for children and young people (5-18 years)

For disabled children and young people
Physical activity for disabled children and young people

10 Minute Shake Up games
https://www.nhs.uk/healthier-families/activities/10-minute-shake-up/

Monitoring and Compliance

This section should identify how the Trusts plan to monitor compliance with and the effectiveness of this Treatment pathway. It should include auditable standards and/or key performance indicators (KPIs) and details on the methods for monitoring compliance.

WHAT?	HOW?	WHO?	WHERE?	WHEN?
These are the 'key' parts of the process that we are relying on to manage risk.	*What are we going to do to make sure the key parts of the process we have identified are being followed?*	*Who is responsible for the check?*	*Who will receive the monitoring results?*	*Set achievable frequencies.*
The management of type 1 diabetes in children and young people	Submit data to the National Paediatric Diabetes Audit	Dr James West	The paediatric multidisciplinary diabetes team and the paediatric department. The CCG's.	Annually
The management of diabetic ketoacidosis in children and young people	Submit data to the West Midlands Paediatric Diabetes Network DKA audit when requested. If not regularly requested a local audit will be performed.	Dr James West and Dr Naeem Ahmad	The paediatric multidisciplinary diabetes team and the paediatric department.	Annually
Paediatric & adolescent diabetes transitional care	Submit data to the West Midlands Paediatric Diabetes Network transition audit when requested. If not regularly requested a local audit will be performed.	Dr James West	The paediatric multidisciplinary diabetes team and the paediatric department.	Every 2 years

References

1) National Institute for Health and Care Excellence. Identification, assessment and management of overweight and obesity in children, young people and adults. (Clinical Guideline 189). 2014

2) Obesity Services for Children and Adolescents (OSCA) Network Group. OSCA Consensus Statement on the Assessment of Obese Children and Adolescents for Paediatricians. 2009

3) Health and Social Care information centre. Health Survey for England (HSE) data. 2010

4) McKinsey Global Institute (2014) Overcoming obesity: An initial economic analysis McKinsey and Company

5) National Institute for Health and Care Excellence. Obesity. (Clinical Guideline 43). 2006

6) National Institute for Health and Care Excellence. Weight management: lifestyle services for overweight or obese children and young people. (Clinical Guideline 47). 2013