Applying ‘All Our Health’ Guidance to Promote Healthier Weight in Children

Children with Excess Weight (CEW) what happens to them?

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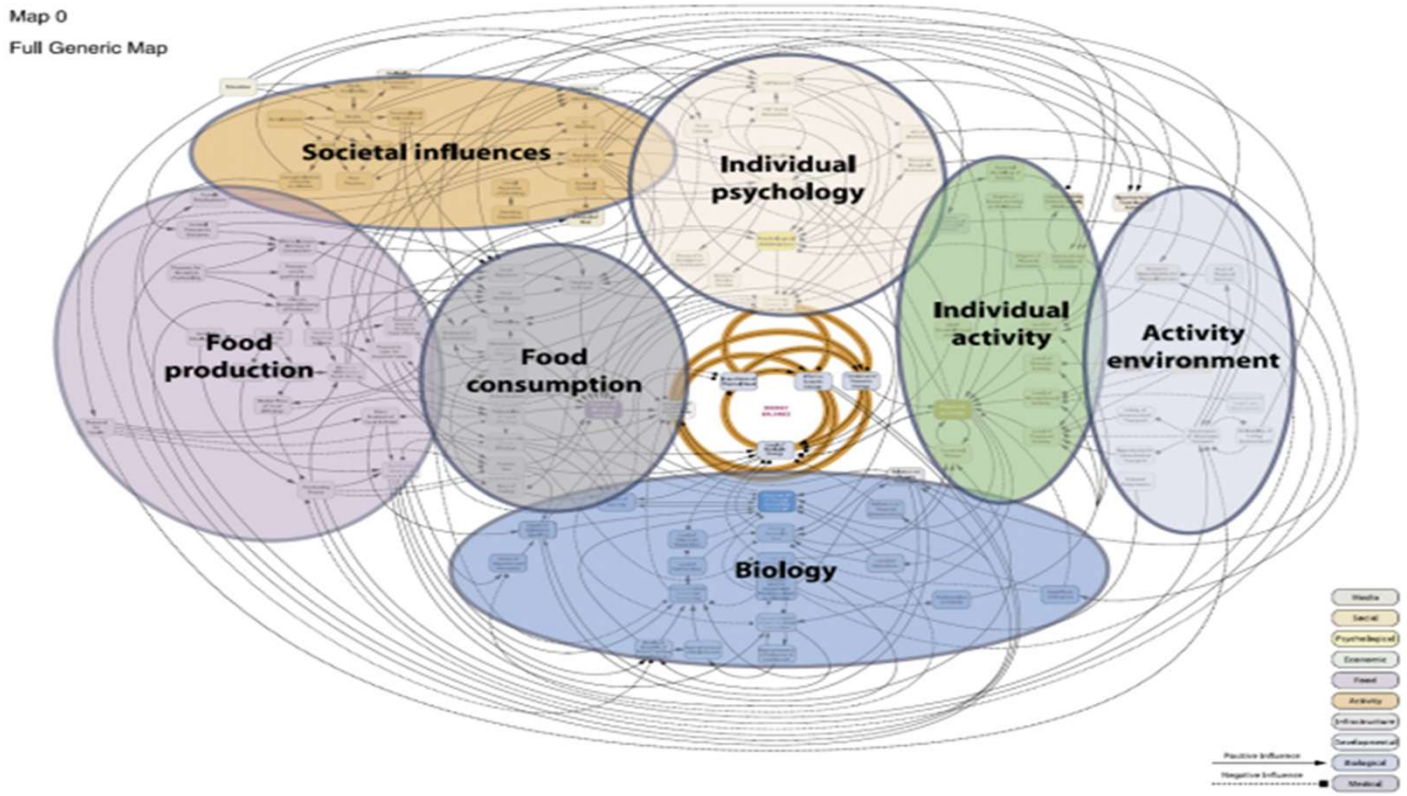
Content

- The consequences of excess weight in childhood
- Is Obesity a disease?
- Are there other causes apart from over nutrition?
- Nutritional vs non-nutritional risk of Obesity
- Treatment and management of Children with excess weight
- COCO clinic- Bristol
- Case study
- CEW pilot project

The obesogenic environment- Foresight report produced– in 2007

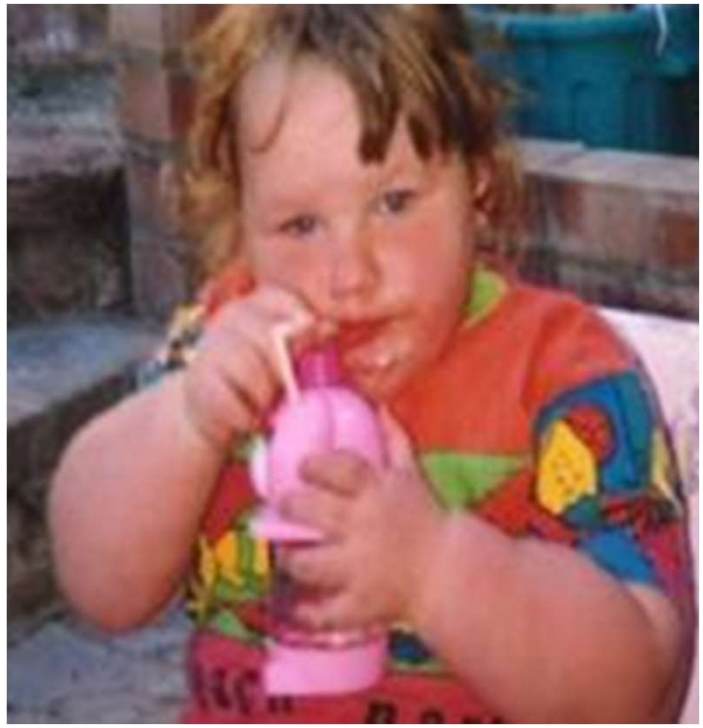


The consequences

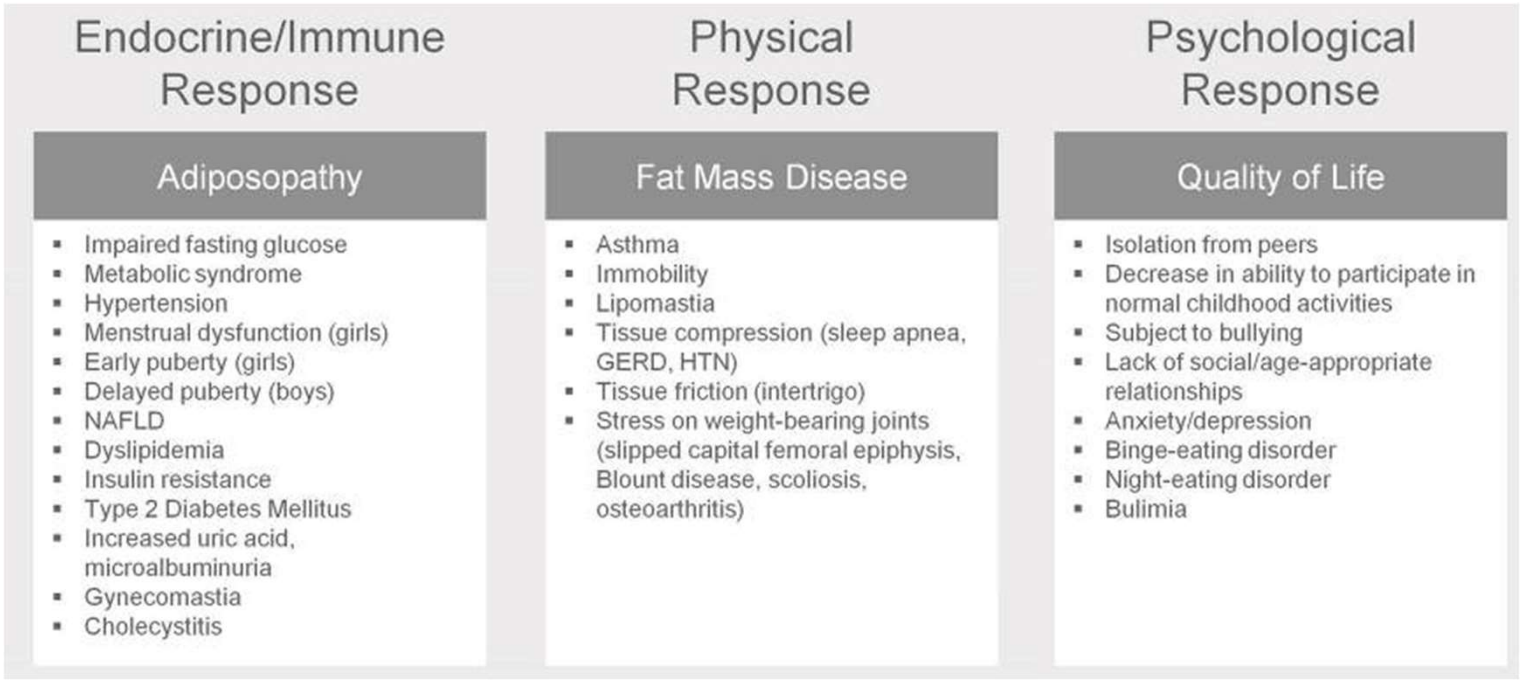
- Obese Children likely to become obese adults
- Significant health risks
- Heart disease, stroke, high blood pressure, diabetes and some cancers
- Low self-esteem and body image
- Doubles the risk of premature death

Consequences of childhood obesity

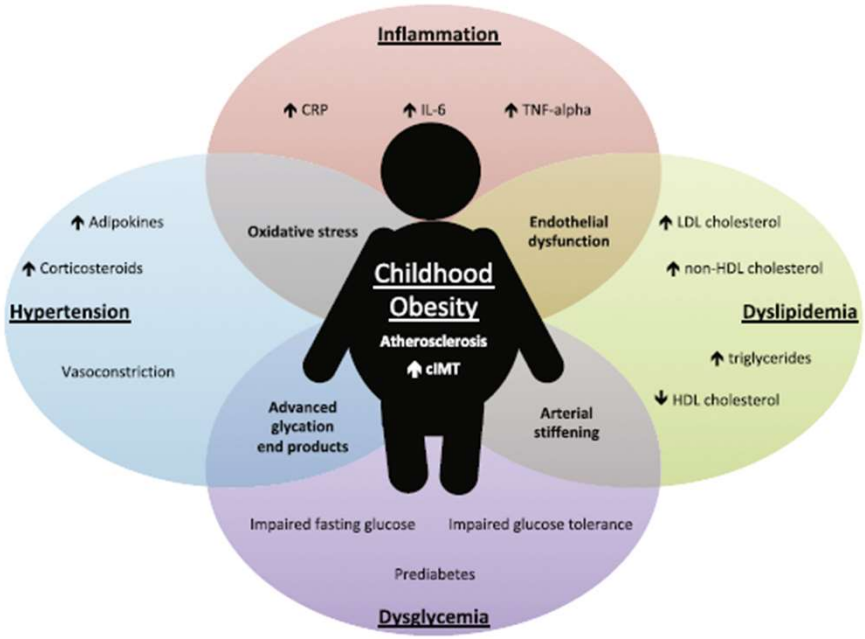
- Sleep disorders
- Idiopathic intra-cranial hypertension
- Type 2 diabetes
- Depression
- Gall stones and liver disease
- Hypertension
- Kidney disease
- Cardiovascular disease
- Cancer-Uterus, breast, colon and others



Is Obesity a disease?



Glucose dysregulation and cardiovascular risk in Children & Young People living with obesity



ELSEVIER

Check for updates

Canadian Journal of Cardiology 36 (2020) 1352–1361

Review

Childhood Obesity and Cardiovascular Disease Risk: Working Toward Solutions

Patrick G. McPhee, PhD,[a,b] Selena Singh,[a,b] and Katherine M. Morrison, MD[a,b]

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Nutritional vs other causes of Obesity

- Children with obesity due to nutrition-have consistent or accelerated growth
- Early development of secondary sexual characteristics
- Bone age development that exceeds their chronological age by more than 2 standard deviations

Non-nutritional Obesity

- Typically have decreased linear growth
- Testing of thyroid hormone may be required
- If there is clinical suspicion of Cushing's syndrome, a dexamethasone suppression test or 24hr urinary free cortisol level is indicated

Genetic causes

- Very rare, <5%
- Should be considered in children with severe obesity before the age of 5 years.
- May present with developmental delay, short stature, dysmorphic facies, or hyperphagia
- Eg: Prader Willi, Bardet-Biedl, Albrights Hereditary Osteodystrophy, Alstrom, Congenital Leptin deficiency, POMC deficiency, MC4R deficiency,

High risk groups

- Children with special needs-increased risk of obesity
- Children living in “obesogenic” environment
- Child safeguarding issues

The Theory

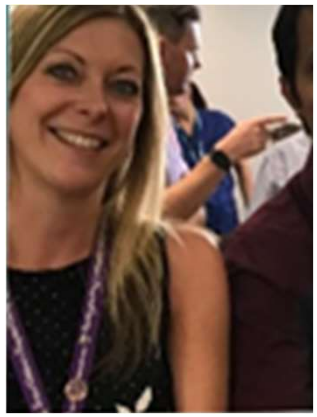
Obesity and weight management

British Dietetic Association's Obesity Specialist Group dietetic obesity management interventions in children and young people: review & clinical application

L. Stewart, S. Easter, the BDA's Obesity Specialist Group

First published: 10 November 2020

https://doi.org/10.1111/jhn.12834



Treatment and management of Children with excess weight

- Managing children with risk and likelihood of co-morbidities
- In Bristol we have an established MDT clinic which has been running for many years

Roles within a multidisciplinary team

The CoCO Team

- 2 Consultants
- 2 Specialist paediatric dietitians – (0.4wte & 0.1wte)
- Specialist clinical psychologist – 0.4wte
- Specialist paediatric nurse - 0.5wte
- Social worker - 0.4wte
- Admin and clinic coordinator's support

Children over 2 years of age and under 17 years old and resident in Bristol, North Somerset and South Gloucestershire. Who have: at least one of the below

(i) BMI >40
(ii) BMI >99.6th centile **and** serious comorbidity or complex needs (including child safeguarding concerns with obesity as a primary concern)
(iii) Genetic cause for obesity diagnosed or suspected
(iv) Associated endocrine disorder (for example polycystic ovarian disease)
(v) Rare obesity comorbidity (Idiopathic intracranial hypertension, fatty liver disease, sleep apnoea requiring active intervention)
(vi) Established and managed Type 2 diabetes needing weight reduction as part of therapy (same service referral only)
(vii) Iatrogenic cause of obesity (pituitary surgery)
(viii) Consideration for pharmacological treatments or Bariatric Surgery

Additional requirement:
Family must have previously engaged (with evidence) with tier 2 community based services for weight management (Failure to Engage with lower tier services will be an exclusion criterion unless child safeguarding concerns).

Prior to referral, base line investigations include:

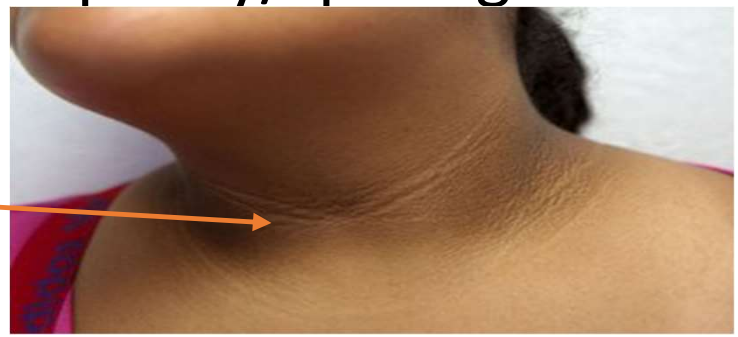
- Fasting plasma glucose
- LFTs
- Fasting Lipid Profile
- TFTs
- HbA1C

Referral is by letter to the clinic based at the Bristol Royal Hospital for Children.

Referrals can be from GPs & Paediatricians

Physical Examination and Investigations

- Looking for dysmorphism
- Distribution of fat-generalized/central adiposity/sparing of extremities
- Striae (common)
- Acanthosis nigricans
- (sign of insulin resistance/prediabetes)
- Hirsutism in females
- Pubertal examination(hypogonadism is common in genetic obesity)



Investigations/Diagnostic work up

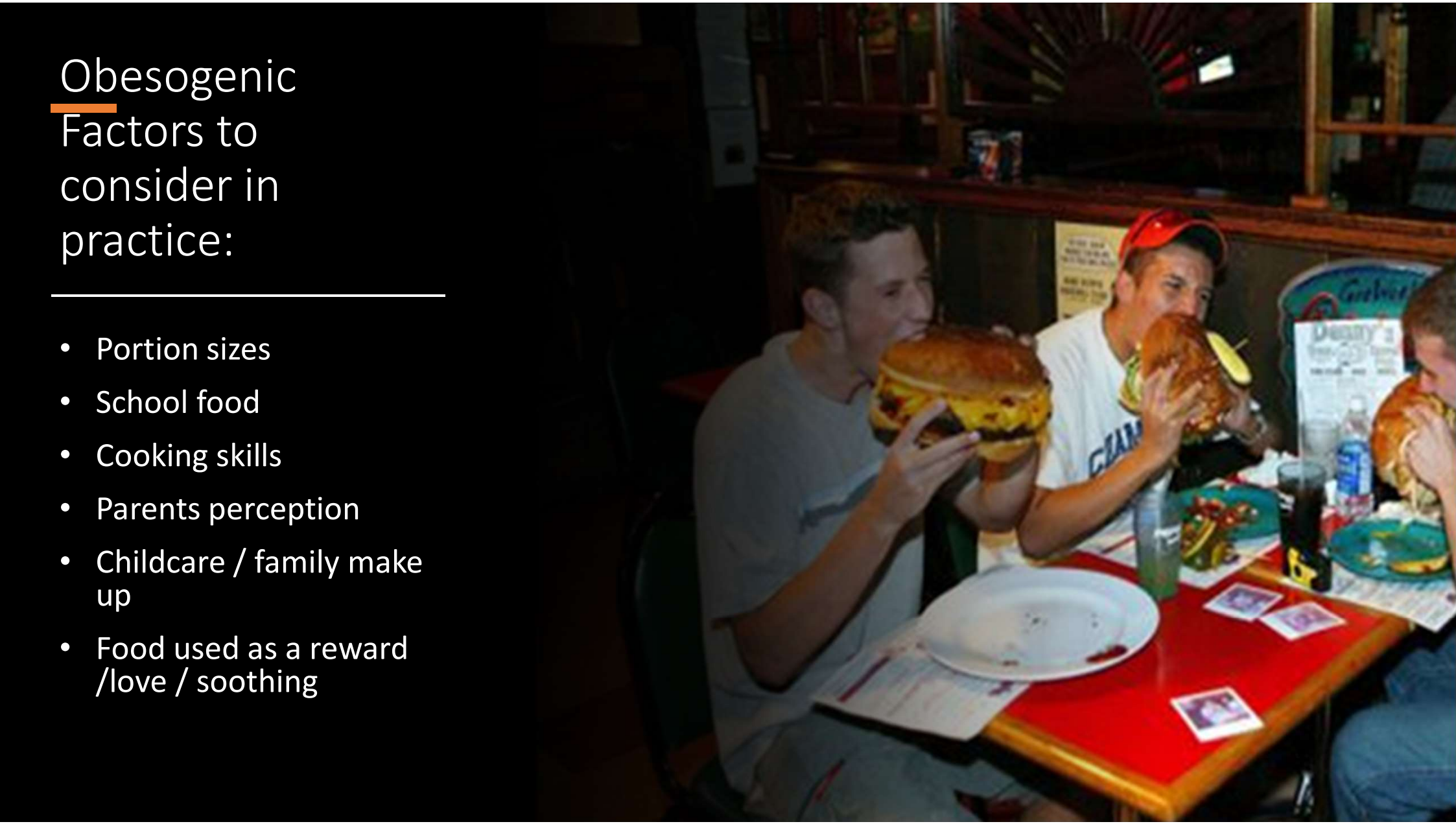
- Depends on age and presentation
- Most of the investigations tend to identify comorbidities
- Genetic studies where appropriate
- Fasting glucose, insulin, thyroid tests, liver function test
- Sleep study where applicable, Liver ultrasound

In Practice

- Get to know the family, use the whole team
- Get a detailed diet history
- May need to allow families to start working through their challenges before dietary changes can occur
- This helps guide what approach to use and the speed of change

Obesogenic Factors to consider in practice:

- Portion sizes
- School food
- Cooking skills
- Parents perception
- Childcare / family make up
- Food used as a reward /love / soothing



In Practice

- Other approaches used:
  - Using the structured plan as a calorie controlled plan
  - Apps to calorie count
  - Low fat diets to support the prescription of Orlistat
  - Slimfast*
  - Inpatient admission

Pharmacological Treatment

Orlistat:

Should only be prescribed for:

- severely obese adolescents (those with a BMI ≥99.6th centile) **with** comorbidities (psychological or physical)

- or those with very severe to extreme obesity (BMI ≥3.5 SD above the mean)

SIGN, 2010 & NICE, 2014

Pharmacological Treatment

Liraglutide (Saxenda)

- Adolescents (>12 years),
- BMI>/= 30 kg/m2

- Contraindications: History or family history of Multiple Endocrine Neoplasia 1 (MEN1) or Medullary thyroid carcinoma
- Relative contraindication: history of pancreatitis
- N Engl J Med 2020; 382:2117-2128

Surgical treatment

Bariatric surgery

- Can be considered for post pubertal adolescents **with** very severe to extreme obesity (BMI ≥3.5 SD above the mean on 1990 UK charts) **and** severe comorbidities.

NICE 2014

Are we effective

- In 2019 an audit of our data showed:
  - 60% improved their BMI SDS score
  - the mean BMI SDS improvement score was 0.35 SDS

Case study

- Boy (9.5 years: Known Williams Syndrome/LD)
- Weight 90Kg/Height 129cms (BMI 54)
- Referred to ENT/Respiratory physicians for tracheostomy for severe, life threatening obstructive breathing problems

1000 kcal daily plan
Daily recommended 1,840kcal

This is an interim plan,

Breakfast – muller light yoghurt or small mashed banana

Lunch – pick from hospital menu (vegetables or salad) + a protein and a small portion of carbohydrate, if these are healthy choices. No pudding needed but order a banana so its available for the next day

3pm muller light yoghurt or small mashed banana

5pm evening meal – as per lunch

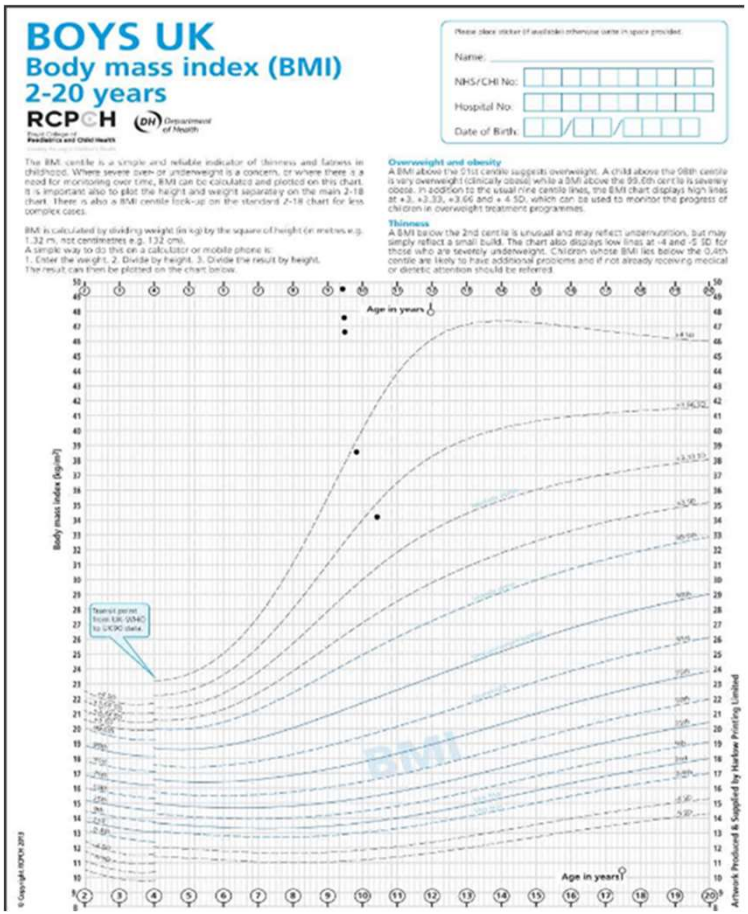
Avoid very wet foods, try to pick items that can be given in a singular form e.g chicken and vegetables rather than a Sheppard's pie. However he did like the mashed carrot and swede so softer foods are worth trying.

Avoid pies, pastry, chips & roast potatoes

Catering will supply 1 yoghurt & 1 banana/ day from 16th May please collect this from the catering dept

[redacted] is unlikely to eat all that's given but this is ok, this is about trying a range of foods and textures and no alternatives should be given if he doesn't complete a meal

Please weigh him twice a week whilst he is an inpatient



Case study

MDT all present at case conference for planning ahead.

After a 5 week stay in hospital weight ↓90 to 77Kg
Direct communication between our MDT, Dietitians, nurses, social workers and psychologist with local team

Before- BMI 54

After- BMI 34

Respiratory function improved significantly with initial weight loss

	> 4%	Dips < 90%	Dips < 85%	Dips < 80%	Dips < 75%	Dips < 70%
Dips: (0 < Duration < 180)	80	58	34	20	10	6
Dips/Hr:	14.59	10.57	06.20	03.65	01.82	01.09
Mean Nadir:	83.59					
Average event duration (secs):	14					
Max event duration (secs):	84					

	> 4%	Dips < 90%	Dips < 85%	Dips < 80%	Dips < 75%	Dips < 70%
Dips: (0 < Duration < 180)	10	0	0	0	0	0
Dips/Hr:	1.67	00.00	00.00	00.00	00.00	00.00
Mean Nadir:	93.10					
Average event duration (secs):	48					
Max event duration (secs):	170					

What next for these children?

Children and Young People Transformation Programme

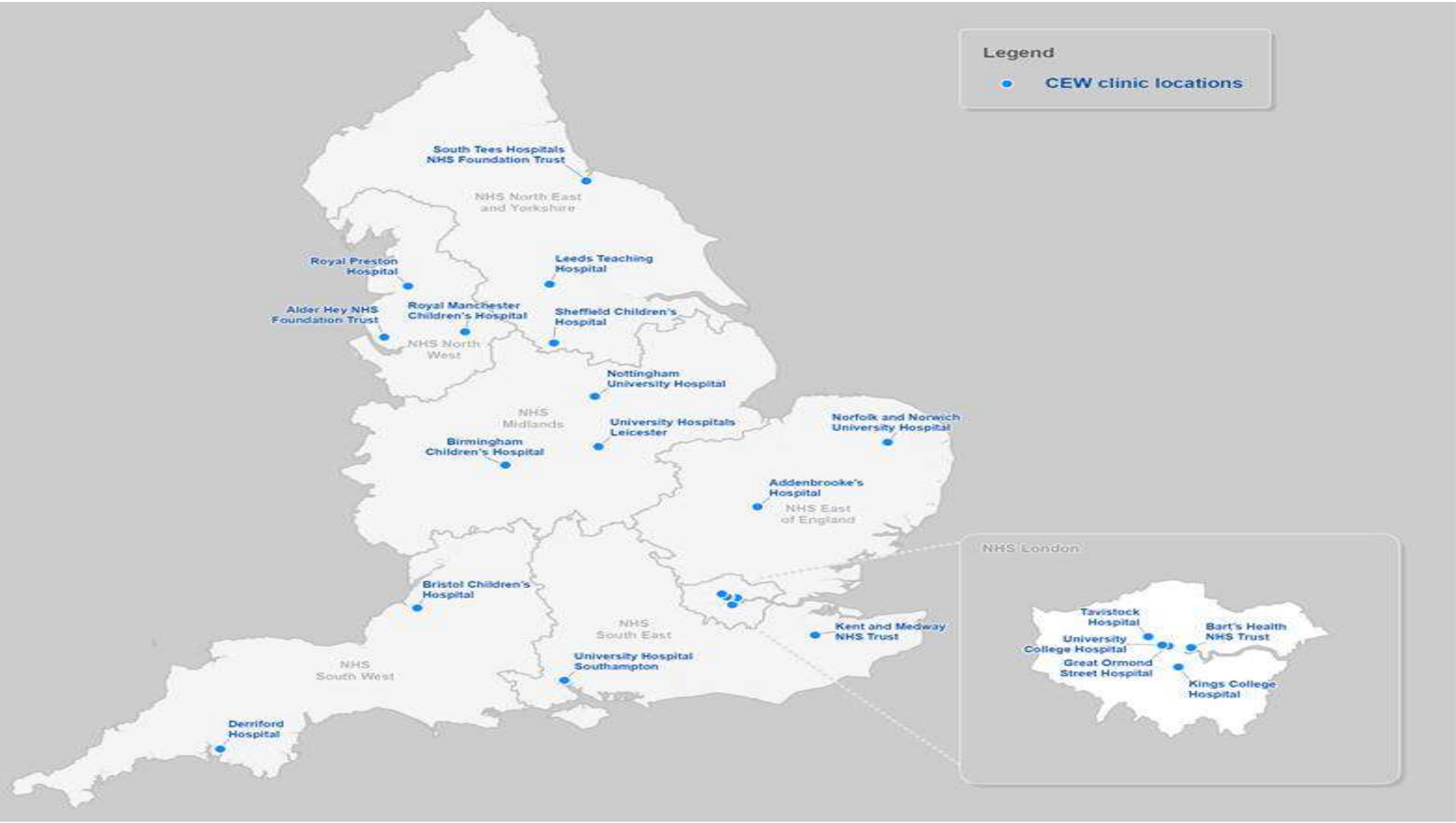
Meeting the CYP Obesity Long Term Plan commitment: programme update

CEW clinic's

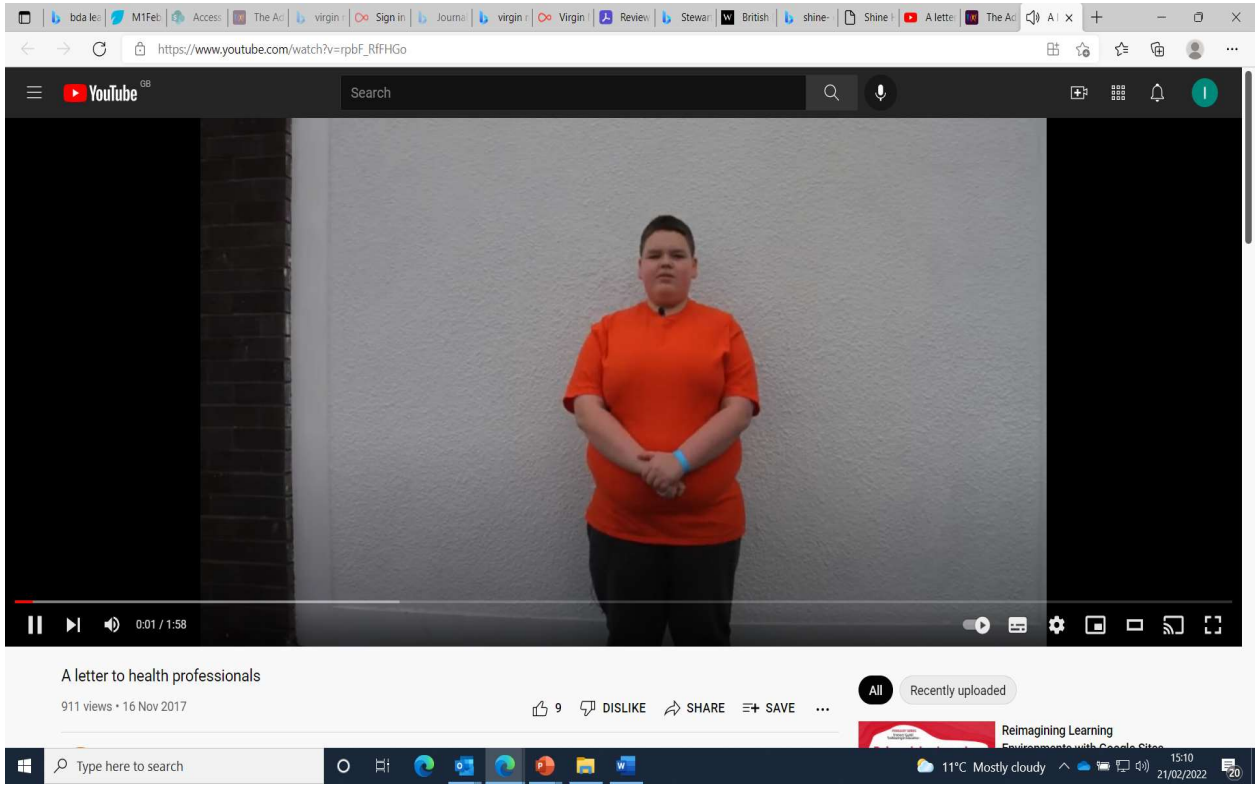
Children with Excess Weight-

- Pilot study to develop the evidence base & commissioning model for **specialist MDT clinics** to treat complications associated with severe obesity

- The pilot will run over three years from 2021 with 3 main ambitions:
  - To establish whether there is an optimal MDT model for treating CYP with complications related to severe obesity;
  - To build the evidence base for this cohort;
  - To improve system wide data collection.

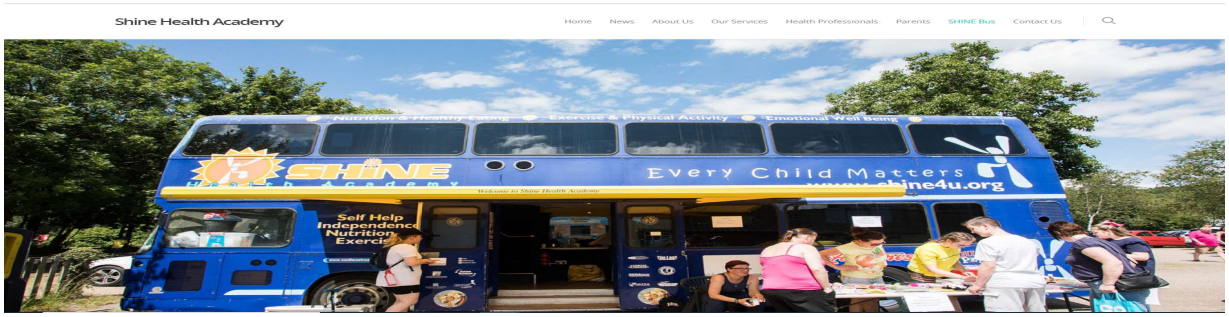

Legend
CEW clinic locations
South Tees Hospitals NHS Foundation Trust
NHS North East and Yorkshire
Royal Preston Hospital
Leeds Teaching Hospital
Alder Hey NHS Foundation Trust
Royal Manchester Children's Hospital
Sheffield Children's Hospital
NHS North West
Nottingham University Hospital
NHS Midlands
University Hospitals Leicester
Norfolk and Norwich University Hospital
Birmingham Children's Hospital
Addenbrooke's Hospital
NHS East of England
NHS London
Bristol Children's Hospital
NHS South East
Kent and Medway NHS Trust
University Hospital Southampton
NHS South West
Derriford Hospital
Tavistock Hospital
University College Hospital
Great Ormond Street Hospital
Bart's Health NHS Trust
Kings College Hospital

[A letter to health professionals - YouTube]



About Us – Shine Health Academy

SHINE is a community based weight management programme that helps young people aged 10-17 years not only lose weight but also to gain in self esteem and confidence. We are a dedicated team who puts young people first to help them achieve their full potential



Acknowledgements

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