

# Psychosocial consequences of weight monitoring in children: Systematic review and policy mapping

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## **SUMMARY**

### **Background**

This review was carried out to inform policy development on the National Child Measurement Programme (NCMP) in England. The NCMP, which has been in place since 2006, involves the collection of data on the height and weight of children in reception (age 4-5) and Year 6 (10-11). There has been concern about the psychosocial impact of weight monitoring on children.

### **Methods**

We searched nine database sources and included studies which reported any data on views or perceptions of routine weight monitoring on children aged 4-12. We included any study design, including trials, cross-sectional quantitative studies, and qualitative research. We synthesised data narratively and carried out thematic synthesis of the qualitative data. We also carried out informal policy mapping to understand what weight monitoring policies have been implemented internationally.

### **Results**

The review included 17 studies: two trials, three uncontrolled intervention studies, seven cross-sectional surveys and eight qualitative studies (some reported more than one kind of data). Intervention studies generally show no impact of weight monitoring on outcomes such as weight-based teasing or self-esteem. However, there are issues with the quality of the studies and only one trial provides robust data (although the findings of the other studies are broadly consistent). Survey studies report rates of satisfaction with weight measurement around 70% to 90%, although rates may be substantially lower (under 50%) in certain subgroups, particularly girls and children who are overweight or living with obesity. The qualitative research similarly indicates that adverse consequences of weighing are not widespread. However, some children do experience adverse consequences including excessive concern with weight. Teasing or bullying appear to be rare, although they are often a focus of worry, and children have a strong preference for privacy, especially those in the older age group.

The policy mapping found that weight monitoring has been widely implemented internationally. However, the contexts of weighing vary. Programmes in the USA tend to focus on BMI and/or physical fitness and on reporting results to parents, while in other countries weight monitoring is normally carried out as part of routine health checks which aim to assess children's health more broadly, and results are often not routinely reported to parents.

### **Conclusions**

While there is potential for harm in some cases, most children do not experience negative psychosocial impacts of weight monitoring. However, some subgroups of children may have more negative perceptions. There is limited outcome data, and further research using robust evaluation designs would be valuable. Future research could also investigate the impacts of weighing as against weight feedback; differences

between ethnic and socio-economic groups; and the broader contexts of how children understand and experience weight monitoring.

# **Psychosocial consequences of weight monitoring in children: systematic review and policy mapping**

## **BACKGROUND**

This review was carried out to inform policy development on the National Child Measurement Programme (NCMP) in England. The NCMP, which has been in place since 2006, involves the collection of data on the height and weight of children in reception (age 4-5) and Year 6 (10-11) to provide detailed public health surveillance data, and to help identify children in need of support. Measurement results are also fed back to children's parents; however, it is a local authority decision on if and how this is done as it is not mandatory for local authorities to do this and can be dependent on whether there are child healthy weight services in place.

Some concerns have been expressed about potential negative impacts of participating in weight monitoring programmes. This may include, for example, weight stigma or bullying, disordered eating behaviours, or broader mental health impacts. Some of these impacts may relate more to feedback of data to parents; it is unclear how far weight measurement in itself, as distinct from the communication of results, may potentially contribute to negative outcomes. While there is a substantial evidence base on perceptions of weight monitoring in general, much of this data does not relate directly to real impacts on children's wellbeing. This review aimed to focus specifically on the latter, while including all types of relevant studies, including qualitative research and surveys as well as outcome evaluations. We also included a policy mapping component to give an overview of relevant international policies, and add some detail on how weight monitoring programmes are implemented in practice.

## **METHODS**

### **Review question**

The review question was:

- What is known about potential psychosocial consequences of routine weight monitoring in children aged 4-12?

The review was registered on PROSPERO before starting work (registration number CRD42024520582). EPPI-Reviewer software was used to manage data.

### **Searching**

A search strategy was designed in Ovid MEDLINE by an Information Specialist (HF) in consultation with the review team. The strategy used search terms to represent the following concepts: children's weight; schools; weight-screening; types of harm; views and attitudes; weight screening programmes; and OECD countries. These concepts were combined in different ways to pick up as much relevant literature as possible, with the following combinations searched:

- children's weight terms AND weight-screening terms AND types of harm terms
- schools terms AND weight-screening terms AND types of harm terms

- views and attitude terms AND children's weight terms AND weight-screening terms
- views and attitude terms AND schools terms AND weight-screening terms
- children's weight screening programmes terms AND views and attitude terms
- children's weight screening programmes terms AND types of harm terms

The results of each combination of concepts were then pooled together using the Boolean operator OR. Text word searches for terms appearing in the title, or abstract fields of database records were included in the strategy alongside searches of relevant subject headings. The strategy used a geographic filter to limit papers to OECD countries and limited to English language papers. We limited the searches to the last 20 years (2004-Current) to increase the relevance of the findings, as initial scoping indicated that routine weight monitoring was not widely implemented prior to this.

The final MEDLINE strategy was adapted with relevant subject headings (controlled vocabularies) and search syntax, appropriate to each resource. The results of the databases were deduplicated in EndNote 21. See Appendix 1 for full search strategies.

The following databases were searched on 4<sup>th</sup> March 2024:

1. MEDLINE(R) ALL (Ovid): 1946 to March 01, 2024;
2. Embase (Ovid): 1974 to 2024 March 01;
3. PsycINFO (Ovid): 1806 to February Week 5 2024;
4. HMIC Health Management Information Consortium (Ovid): 1979 to November 2023;
5. Social Policy and Practice (Ovid) Inception – February 2024
6. Cochrane Central Register of Controlled Trials (Wiley): Issue 2 of 12, February 2024;
7. Cochrane Database of Systematic Reviews (Wiley): Issue 3 of 12, March 2024;
8. ERIC (EBSCO): Inception – Current;
9. Dissertations & Theses A&I (ProQuest): Inception – February 2024.

We also performed supplementary searches: we scanned the reference lists of included studies and of systematic reviews including relevant data, and carried out forwards citation chasing using Google Scholar, scanning all hits for references likely to meet criteria (carried out May 2024).

## **Screening**

A random sample of 10% of records were screened by two reviewers independently and differences resolved by discussion. After this, the review team judged that agreement was sufficient for the remaining records to be screened by one reviewer alone. The full text of all references included at title and abstract stage was retrieved and screened by two reviewers independently.

The inclusion criteria were:

1. Does the study report data relating to a programme of weight monitoring for the general population?

- *Exclude* studies of weighing in clinical settings, or of specific clinical groups. *Exclude* studies which weighed people for research purposes only. *Exclude* studies of interventions aimed specifically at overweight / obesity populations if they do not also address weight monitoring.
2. Does the programme cover children aged between 4 and 12?
- *Include* studies of age groups partly within this range if >50% of participants are aged 4-12
3. Does the study report data relating to the perceptions, views or attitudes of children and/or parents?
- *Include* quantitative survey data *or* qualitative data *or* outcome evaluations reporting any views outcome; retain systematic reviews including these studies for reference checking
4. Was the study conducted in a high-income OECD member country?<sup>1</sup>
5. Does the study report substantive data on the psychosocial consequences of weight monitoring for children?
- *Include* self-esteem, mental health, teasing/bullying, disordered eating, weight satisfaction, discomfort; *exclude* general perceptions of programmes (e.g. on the utility or accuracy of weight monitoring) with no data, or only minimal data, on psychosocial consequences for children; *exclude* changes to physical activity or diet (unless referring to disordered eating or extreme activity); *include* only studies where children have actually undergone monitoring (i.e. *exclude* views about hypothetical cases); *include* parent views only if they relate to consequences for children
6. Do the views data relate to weighing rather than weight feedback?
- *Exclude* data relating purely to feedback experiences; *include* any other views data

## Quality assessment, data extraction and synthesis

We used the quality assessment tools published by JBI (<https://jbi.global/critical-appraisal-tools>), using the appropriate tool for each study type. Studies were not excluded or downgraded based on quality assessment. We extracted data on the contextual features of the study (population, setting), the weight monitoring intervention (where appropriate), and findings. For qualitative studies, we coded

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<sup>1</sup> Include countries defined as high income by the World Bank which are also OECD members, i.e.: Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, UK, USA.

findings data using the textual coding feature in EPPI-Reviewer, using a thematic synthesis approach without a formal *a priori* framework. All quality assessment and data extraction were carried out by one reviewer and checked in detail by another. We carried out a narrative synthesis, with studies grouped by study design.

## **Policy mapping**

This research employs a document analysis aimed at mapping relevant policies at the national/regional/government level for routine weight monitoring in children in OECD countries. Document analysis is a systematic procedure for reviewing or evaluating documents such as policy documents in our study, in which data can be examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge (Corbin and Strauss, 2008). We searched Google to identify weight monitoring policies in selected OECD countries and states in the United States. (These searches were pragmatic and non-systematic; they were separate from those undertaken for the review above, and the results are not included in the flow of literature in Figure 1, which refers only to the review component.)

From the Google search, linked documents and relevant websites were examined. The approach was to search using the following phrases and looked at all 10 records related to each search phrase in the first page of Google, including websites, policy documents and research studies.

‘(Country name) policy for weight monitoring in children’

‘(Country name) child measurement policy’

‘weight checking in (Country name)’

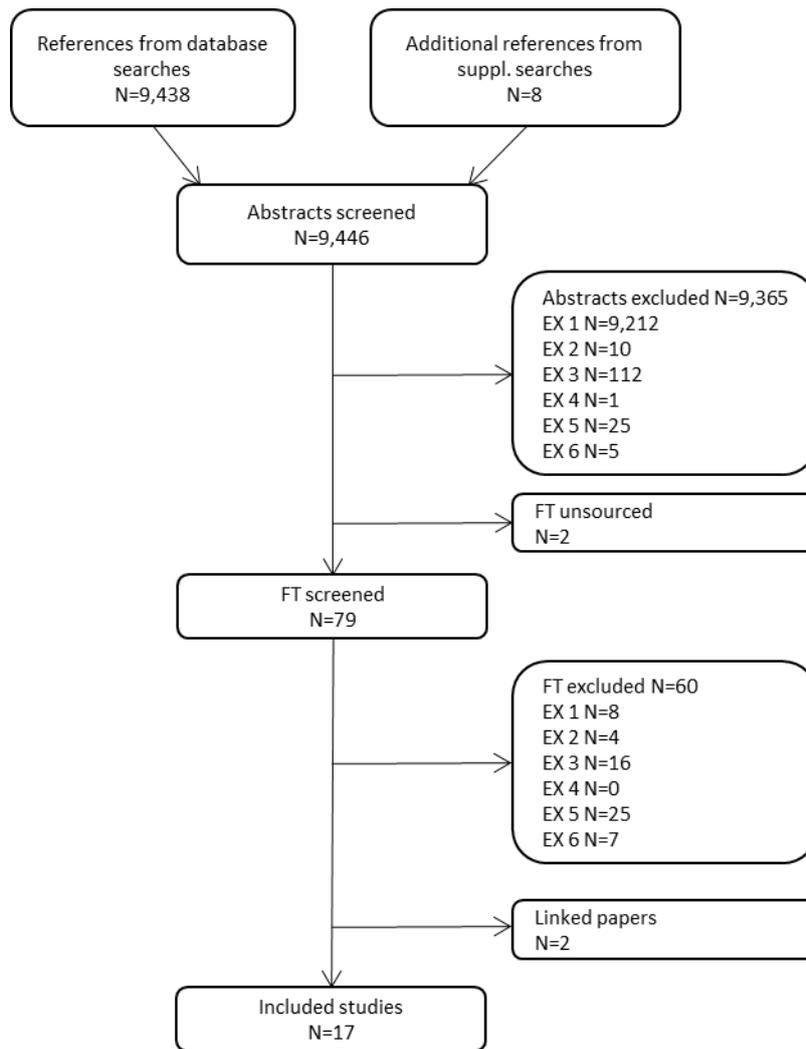
‘obesity screening in (Country name)’

We extracted data from relevant references on the objectives of the programme, the implementation of weight monitoring and on whether results were fed back to children and/or parents.

## **RESULTS**

The database searches 11,882 records; after deduplication there were 9,438 records. An additional eight potentially relevant records were found from supplementary searching (citation chasing). After screening, 17 studies (and two additional linked reports) were included in the review. Two potentially relevant abstracts of conference presentations were not included as the authors advised that no full report of the study was available, and insufficient data were presented in the abstract to extract (Heavey et al., 2013; McSweeney et al., 2023). The flow of literature is shown in Figure 1.

Figure 1. Flow of literature through the review



Of the included studies, five reported evaluation data from before and after an intervention (two randomised controlled trials and three uncontrolled (single-group)); seven reported cross-sectional survey data about perceptions of weight monitoring; and eight reported qualitative data from interviews and/or focus groups (some studies reported more than one kind of data).

The full results of quality assessment can be found in Appendix 2. Of the two RCTs, one was of relatively higher quality while one had several serious methodological limitations. The uncontrolled intervention studies were limited by the lack of a control group, and also by issues around follow-up. The cross-sectional surveys showed some limitations around the reporting of population and setting characteristics and the statistical analysis. The qualitative studies were of moderate quality overall. Results are reported separately by study type in the following sections.

## Intervention evaluations

The characteristics and findings of the five studies reporting data from before and after an intervention are shown in Table 1. (Note that where relevant, only those population subgroups and outcomes within the scope of this review were extracted.)

These studies measured psychosocial outcomes before and after children were weighed, including one cluster-randomised trial, one individually randomised trial, and three uncontrolled studies. These studies measured a range of outcomes, including specifically weight-related outcomes (weight-based teasing, weight satisfaction, dietary restraint) and broader wellbeing outcomes (self-esteem, self-concept). These data assess whether weight monitoring had an impact on psychosocial outcomes.

The interventions evaluated in the studies were generally at least school-wide programmes, and included height and weight measurement, with most involving feedback of results to parents. (The broader question of how impacts of weighing relate to impacts of feedback is addressed in the discussion below.) Some also involved a broader assessment of physical fitness, although the studies focused on the weight monitoring component.

Table 1. Intervention studies

Reference	Aim	Context (year of data collection)	Study design Intervention and control Study procedures	Sample	Psychosocial outcomes	Findings	Subgroup / moderator findings (only where statistically significant)
Falconer et al. (2014)	To assess impacts of NCMP feedback and moderators of impact	UK (England) Five PCTs National Child Measurement Programme. Height and weight measured at school by trained staff. Feedback mailed to parents within 6 weeks. (2011)	Uncontrolled before and after study <i>Intervention:</i> height & weight measured; feedback to parents Baseline distributed on day of measurement (i.e. prior to feedback); follow-up measured one and six months after feedback.	Data from: parents All parents of children participating (in reception, aged 4-5 years) and year 6 (10-11 years). N of schools NR N=284 parents of children with overweight or obesity completed baseline and follow-up (outcomes relevant to this review were only collected from parents of	Weight-related teasing Child low self-esteem	No stat. sig. diff. pre-post in weight-related teasing or self-esteem	No difference by children with overweight vs obesity [note study did not include non-overweight children for relevant outcomes]

Reference	Aim	Context (year of data collection)	Study design Intervention and control Study procedures	Sample	Psychosocial outcomes	Findings	Subgroup / moderator findings (only where statistically significant)
				children with overweight or obesity)			
Grimmett et al. (2008)	To compare parents' and children's reaction to weight measurement and feedback	UK (England) 2 London boroughs Similar to National Child Measurement Programme, during its roll out, but it included year 3 instead of reception year. Researchers measured weight and height individually. Feedback and advice was	Uncontrolled before and after study Intervention: Children completed baseline questionnaires in school up to six weeks before measurement. Follow-up questionnaires were completed four weeks after feedback had been sent.	Data from: children All year 3 (6-7 years) and year 6 (10-11 years) 6 schools N=358 completed baseline and follow-up N=364 responded to post-intervention question	Body esteem Dietary restraint Weight-related teasing by other children, by parents, by siblings Extent of liking/disliking screening Willingness to be weighed and measured again	Stat. sig. higher body esteem after feedback than before for healthy weight children; no stat. sig. diff. for overweight children Stat. sig. lower dietary restraint after feedback than before for 'healthy weight' children; no stat. sig. diff. for children with overweight No stat. sig. diff. pre-post in % who ever experienced	Post-intervention survey: More negative perceptions in older age group

Reference	Aim	Context (year of data collection)	Study design Intervention and control Study procedures	Sample	Psychosocial outcomes	Findings	Subgroup / moderator findings (only where statistically significant)
		mailed to parents. (2007)				weight-related teasing from other children, for either 'healthy weight' children or children with overweight Post-intervention survey: 96% enjoyed it, or found it ok 4% did not like it, or hated it 94% would be willing to be weighed and measured again next year 6% would not want to repeat the process	

Reference	Aim	Context (year of data collection)	Study design Intervention and control Study procedures	Sample	Psychosocial outcomes	Findings	Subgroup / moderator findings (only where statistically significant)
Krukowski et al. (2008)	To assess whether rates of teasing increased after introduction of BMI screening programme	USA (Arkansas) BMI measurement in school, with feedback to parents. (2004 – 2006)	Uncontrolled before and after study Telephone survey of parents conducted before initiation of BMI measurement (2004) and after (2005 and 2006).	Data collected from: parents Pre-kindergarten to 10 <sup>th</sup> grade Statewide (not in specific schools) N=1551 baseline N=2508 at 1 year follow-up N=2358 at 2 year follow-up	Weight-based teasing	No stat. sig. change in weight-based teasing at 1 or 2 year follow up	No sig change in teasing in any subgroup of weight status, gender or (parental) ethnicity
Madsen et al. (2021)	To determine impacts of BMI assessment and reporting and adverse outcomes	USA (California) BMI screening by school staff for the 'FIT study'. Parents in group 1 received feedback, but those in group 2 did not (control group)	Cluster randomised controlled trial Intervention arm 1: BMI assessment <i>Intervention arm 2:</i> BMI assessment and feedback to parents <i>Control:</i> No BMI assessment Researcher administered surveys at baseline	Data from: children Grades 3-7 at baseline, although surveys only administered in grades 4+ N=28,641	Peer weight teasing Peer weight talk Teacher weight talk Weight satisfaction Weight control behaviours Family weight teasing	No stat. sig. diff. in change in teasing, talk or weight control behaviours after two years. Peer weight talk increased more in intervention than control at one year but not at two years. Weight	Perceived weight status did not moderate peer weight teasing or talk frequency

Reference	Aim	Context (year of data collection)	Study design Intervention and control Study procedures	Sample	Psychosocial outcomes	Findings	Subgroup / moderator findings (only where statistically significant)
		received neither). (2014 - 2017)	and year 1 and year 2 follow-up. Follow- ups occurred 6-9 months after BMI assessments (for group 1, this was 1-2 months after feedback was sent out)			control behaviours increased more in control than intervention at one year but not at two years. Weight satisfaction decreased more in intervention than control at two years but not at one year.	
Mickens (2007)	To assess whether BMI screening impacts children's self-esteem	USA (Pennsylvania) Statewide annual screening of school children from kindergarten to 4 <sup>th</sup> grade by	Randomised controlled trial <i>Intervention</i> : BMI calculation + parent feedback <i>Control</i> : no BMI calculation Survey administered by researcher [who	Data from: children and (survey only) parents 2-6 <sup>th</sup> grade (7-12 years) 1 school N=95 children N=56 parents	Self concept (child data) Negative effect of BMI letter on self- esteem and body image (parents)	Randomised controlled trial: No stat. sig. diff. Post-intervention survey: 9% yes (perceived negative effects), 70% no	No difference by gender

<b>Reference</b>	<b>Aim</b>	<b>Context (year of data collection)</b>	<b>Study design Intervention and control Study procedures</b>	<b>Sample</b>	<b>Psychosocial outcomes</b>	<b>Findings</b>	<b>Subgroup / moderator findings (only where statistically significant)</b>
		school nurse, with feedback to parents. (2006-2007)	was the school's principal] at baseline (immediately before BMI calculation) and 5 weeks afterwards.				

Abbreviations: NR, not reported; stat. sig. (diff.), statistically significant (difference)

### *Controlled trials*

Two RCTs, both from the USA, explored whether BMI screening or BMI screening and feedback affected children's weight-related teasing, self-perceptions or behaviours, compared to no BMI screening (Mickens, 2007; Madsen et al., 2021). One was of relatively higher quality (Madsen et al., 2021) while one had several serious methodological limitations (Mickens, 2007).

Madsen et al. analysed data from 14,318 children who were in grades 4-7 (age 9-13) at baseline from 79 schools. Their cluster-randomised trial had two intervention arms: in both children were weighed by school staff (unless they opted out), and in one arm a BMI report was also sent to parents. Their analysis combines both arms compared to a no-intervention control group (a small amount of data is available which differentiates the two arms; see further under Discussion below). They found no difference in peer or family weight teasing, peer or teacher weight talk, or weight control behaviours after two years between those weighed and those not weighed. After one year, peer weight talk increased more among those weighed than not weighed, but weight control behaviours increased more among those not weighed than those weighed. Those weighed were less satisfied with their weight at two-year follow-up than those in the control arm. However, the changes in all cases were small, on the order of 0.05 to 0.1 points on a five-point scale. Also, the changes were inconsistent in direction (i.e. some outcomes improved in the intervention group), and none was consistent across both follow-up time points. The authors did not report psychosocial outcomes by gender, ethnicity or BMI. Perceived weight status at baseline was explored as a moderator (not actual BMI, since this was not measured in the control group); it was not found to moderate peer weight teasing or talk frequency.

Mickens included 97 children in grades 2-6 (age 7-12) from a single school, 53 who had their BMI assessed and 44 who did not. This study evaluated a mandatory, state-wide programme in which school nurses measured the BMI of all children from kindergarten to fourth grade and a BMI report was sent to parents. An individually randomised trial design was used with a wait-list control. The study found no significant changes in self-concept in the weighed and not weighed groups at two months after the intervention, although children were not explicitly asked about perceptions of weight, body satisfaction or weight-related teasing ('my looks bother me' was the most explicit question about physical appearance). There was no difference in intervention effect by gender. As noted, this study has some methodological limitations. In particular, it does not report a power calculation, and given the relatively small sample size, it is unclear that the study had sufficient power to detect an effect. Hence, the finding of no effect may not be robust.

Overall, these studies – subject to caveats about the methodology of Mickens (2007) – indicate that weight monitoring does not affect psychosocial outcomes to any practically meaningful extent.

### *Uncontrolled pre-post studies*

Three studies gathered data before and after weight measurement; two in the UK (Grimmett et al., 2008; Falconer et al., 2014) and one on the USA (Krukowski et al.,

2008). Two reported data from parents (Krukowski et al., 2008; Falconer et al., 2014) and one from children (Grimmett et al., 2008). None of the studies found changes in relevant outcomes after measurement.

Grimmett et al. explored reactions to children being weighed and measured in a way similar to that of the National Child Measurement Programme, during its roll out, among 358 children in year 3 (age 6-7) and year 6 (age 10-11) in six schools in two London boroughs. They surveyed children up to six weeks prior to being weighed and measured individually by researchers and four weeks after parents were sent feedback letters. They found a significant increase in body esteem after measurement among 'healthy weight' participants, but not among those with overweight. Dietary restraint was significantly lower for healthy weight children afterwards, but there were no significant differences for overweight children. There were no significant changes in the proportion of children who had ever been teased about their weight, for either 'healthy weight' children or children who were overweight.

Falconer et al. explored the perspectives of 284 parents of reception and year 6 children (age 4-5 and 10-11 respectively) on the effects of the National Child Measurement Programme in five primary care trusts in England (Falconer et al., 2014). The baseline survey was distributed on the day of measurement, feedback was posted out within six weeks and follow-up surveys were one and six months after feedback (these were combined in the analysis, with preference given to the one month data). They explored changes in weight-related teasing and children's low self-esteem, although they only asked parents of children who were living with overweight or obesity. They found no significant change in weight-related teasing or self-esteem after the intervention, nor was there a difference between parents of children with overweight and obesity.

One telephone survey explored whether weight-based teasing increased after BMI screening in school was introduced in Arkansas, USA (Krukowski et al., 2008). Parents of children in pre-kindergarten to 10th grade (age 4-16) were asked before screening was introduced (N=1,551) and then one (N=2,508) and two years (N=2,358) afterwards. They found no significant change in weight-based teasing at one or two years after screening was introduced. Weight status, gender and ethnicity were not associated with changes in teasing.

### **Cross-sectional surveys**

Seven studies reported data from cross-sectional surveys which measured children's or parents' perceptions after being weighed. The characteristics and findings of these studies are reported in Table 2 (apart from one study which reported both intervention and survey data (Grimmett et al., 2008), which is in Table 1). Relevant outcomes included children's satisfaction with the process, parents' views as to whether weighing had negative effects, and some process measures such as whether weighing was felt to be sufficiently private. This data cannot be used directly to assess the impact of interventions, but provide information about children's experiences.

Table 2. Cross-sectional surveys

Reference	Aim	Context (year of data collection)	Sample	Outcomes	Findings	Subgroup / moderator findings (only where significant)
Altman et al. (2022)	Assess implementation of weight measurement, students' comfort and moderators of comfort	USA, California Fitnessgram (including BMI) annual assessments, by school staff; one arm received BMI screening only, one screening & reporting (combined in analysis) Usually in 5 <sup>th</sup> , 7 <sup>th</sup> and 9 <sup>th</sup> grade (but expanded to all grades for study) (2014-15)	Data from: children 3 <sup>rd</sup> – 8 <sup>th</sup> grade; 8-13 year olds 53% female; 60% Latinx Only those who remembered being weighed at school during the prior school year 54 schools N=11,510	Extent bothered by being weighed at school Weight satisfaction	Bothered by being weighed at school: 64% not, 25% a tiny bit, 7% somewhat, 5% a lot	Higher dissatisfaction for partial/complete privacy vs none; perceived overweight; lower weight satisfaction; female vs male; Latinx, Asian or White vs Black; no difference by age group
Carnes (2011); Jones, Carnes et al. (2018)	Investigate parents' perception of BMI 'report card'	USA, Arkansas Statewide mandatory screening programme with	Data from: parents 1 <sup>st</sup> and 3 <sup>rd</sup> grade Child demographics NR 6 schools N=399	Negative effects such as increased bullying, improper	Believed child's BMI report caused negative effects: 16% yes 70% no 13% unsure	NR

Reference	Aim	Context (year of data collection)	Sample	Outcomes	Findings	Subgroup / moderator findings (only where significant)
		'report cards' sent to parents (Year NR)		eating, or poor self-image	[note: 42% reported not having received BMI report card, but seemed to have answered this question]	
Drilen et al. (2024)	Assess children's experiences of height and weight measurement and association with body dissatisfaction	Norway National screening programme for 1 <sup>st</sup> , 3 <sup>rd</sup> and 8 <sup>th</sup> grade, with feedback communicated to parents. (2021-22)	Data from: children 3 <sup>rd</sup> grade (8-9 years) 49% female 8 schools N=209	Satisfaction with height screening Satisfaction with weight screening	For height screening: 76% satisfied, 23% neutral, 1% dissatisfied. For weight screening: 69% satisfied, 30% neutral, 1% dissatisfied	Higher satisfaction with height screening only for body image dissatisfaction; with height and weight screening for middle and higher SES (area-level) vs lower; with height screening only for 'Western' ethnicity; no difference by gender, body image misperception, rural vs urban
Jones, Huffer et al. (2018)	Assess influence of BMI 'report cards' on parents	USA (Arkansas) BMI screening in schools, with feedback and	Data from: parents Child mean age 5.49; child demographics NR	Negative effects on child such as increased bullying,	Believed BMI report card caused negative effects: 21% yes, 69% no, 10% unsure	Not reported

Reference	Aim	Context (year of data collection)	Sample	Outcomes	Findings	Subgroup / moderator findings (only where significant)
		advice sent to parents. (Year NR)	Parents seeking care at two pediatricians' offices N=66	improper eating, or poor self-image	(Note: findings only presented graphically; numbers estimated from figure)	
Kalich et al. (2008)	Investigate children's perceptions of height and weight screening	USA (Massachusetts) City-wide surveillance system of annual height, weight and fitness measurements for all elementary school children, conducted by PE teachers during PE lesson. Students were told their height and weight but not BMI nor weight status classification. Feedback and locally available	Data from: children 48% female; 38% white, 30% black All 5-8 <sup>th</sup> grade (10-14 years) sampled immediately after measurement. 7 schools N=852	Comfort with weight screening Comfort with height screening Perceptions of privacy Perceptions of location appropriateness	15% slightly/very uncomfortable with weighing 7% slightly/very uncomfortable with height screening 80% sufficient privacy Weight screening location is appropriate: 22% PE class 15% school nurse's office 66% doctor's office 23% at home 2% not at all	Sig. more likely discomfort for children with overweight or at risk of overweight; female. No sig diff by ethnicity, age

<b>Reference</b>	<b>Aim</b>	<b>Context (year of data collection)</b>	<b>Sample</b>	<b>Outcomes</b>	<b>Findings</b>	<b>Subgroup / moderator findings (only where significant)</b>
		resources sent to parents. (2003)				

Abbreviations: NR, not reported; sig, (statistically) significant; sig diff, significant difference

Four studies collected survey data from children (Grimmett et al., 2008; Kalich et al., 2008; Altman et al., 2022; Drilen et al., 2024) and three from parents (Mickens, 2007; Carnes, 2011; Jones, Huffer, et al., 2018). Five were from the USA (two of which were from Arkansas), one was from the UK (Grimmett et al., 2008) and one from Norway (Drilen et al., 2024).

### *Children's views*

All four studies reporting children's perspectives asked their views on getting weighed and/or height measured, although in one (Grimmett et al., 2008), the question and response options were not made clear. The proportion of children reporting being uncomfortable, dissatisfied or 'bothered' by being measured ranged from 1% to 37%, although the questions asked were heterogeneous and may not be directly comparable. Also, where figures were broken down, most children who were dissatisfied were only 'slightly' or 'a tiny bit' dissatisfied (25% in Altman et al.'s study as against 7% 'somewhat' and 5% 'a lot').

Grimmett et al.'s study from the UK, the intervention component of which was described above, also included a survey component. Children (N=364) were asked about their experience after being weighed and measured (although the exact question and response options were not reported). Almost all said that they enjoyed it, or found it OK (96%), and were willing to repeat the experience the next year (94%). Year 6 children were more likely to report not liking or hating it than Year 3 (n=9 as against n=4); overweight children were more likely to report not liking or hating it than 'healthy weight' children (7% as against 3%), and not wanting to repeat the process next year (10% as against 5%). However, statistical significance was not reported for these analyses.

In Altman et al., 11,510 children in grades 3 to 8 (age 8-13) from 54 schools in California, USA, were asked the extent to which they were bothered by being weighed at school, if they remembered being weighed the previous school year. BMI measurements were conducted as part of the 'Fitnessgram' annual assessments conducted by school staff. The majority reported that they were not bothered by being weighed at school (64%), with 25% bothered 'a tiny bit', 7% somewhat and 5% a lot. There was significantly higher dissatisfaction (aggregating all categories of 'bothered') among those who perceived themselves to be somewhat overweight (60%) or very overweight (66%), those who were unhappy (62%) or very unhappy (62%) with their weight, females (45%), and Latinx (38%), Asian (36%) or white (34%) compared to black children (27%). There were no differences by age group. There was also higher dissatisfaction among those reporting partial or complete privacy compared to none, and those who reported being weighed by a PE teacher compared to a nurse.

A study in seven schools in Massachusetts explored children's comfort with being screened (Kalich *et al.*, 2008). 852 children in grades 5 to 8 (age 10-14) were sampled immediately after participating in the annual height, weight and fitness measurements of all elementary school children, conducted by PE teachers during a PE lesson. They found that overall, a minority of children reported feeling uncomfortable with height (7%) or with weight (15%) screening in school. The majority felt that there was

sufficient privacy (80%), although only 22% felt that a PE class was an appropriate location for weight screening. Discomfort was greater among those who were overweight or female, but did not differ by ethnicity.

In Norway, 209 third grade children (age 8-9) from eight schools were asked to select between a 'unhappy, 'happy or 'neutral' face emoji to represent their experience/satisfaction with height and with weight screening (Drilen et al., 2024). The majority reported being satisfied (happy emoji) with height (76%) and weight (69%) screening, with 23% and 30% respectively reporting being neutral (neutral emoji) and 1% being dissatisfied with height or weight screening (unhappy emoji). They found no difference in satisfaction by gender or body image misperception (although it is not clear how many participants reported non-Norwegian parents). Children from schools in areas with low socioeconomic status were significantly more likely to report dissatisfaction with height and weight screening, compared to children in schools in medium or high socioeconomic status areas (odds ratio 4.01 (95% CI 1.73 to 9.30) adjusted for confounders including gender and BMI); children with (a) parent(s) born in a 'non-Western' country were significantly more likely to report dissatisfaction with height screening (adjusted odds ratio 3.01 (95% CI 1.24 to 7.32)), but did not differ in satisfaction with weight screening. There was no association between body image and satisfaction with weight screening; only those desiring a smaller body size were significantly less likely to report dissatisfaction with height screening.

#### *Parental views*

All three studies reporting parental views (all from the USA) asked whether parents believed that the BMI letter or report had had a negative effect on their child e.g. on their self-esteem or body/self-image, or increased bullying or improper eating. Most parents in all studies answered no (approximately 70% in each study); this similarity is all the more striking when noting that one study only asked parents of children living with overweight or obesity (Mickens), whereas the other two studies asked parents of children of all weight categories.

One study asked parents of children in first and third grade (age 6-9) in six schools in Arkansas, who would have been screened the previous year, if they believed that the BMI report cards sent to parents had any negative effects, such as increased bullying, improper eating or poor self-image (Carnes, 2011). Just over one third of those invited to participate responded to the survey (n=399); 42% reported not having received a BMI report card, although they appear to have answered the question about negative effects regardless. 70% did not believe it caused any negative effects; 16% felt that it did and 13% were unsure.

Another study in Arkansas invited parents visiting two paediatrician's offices to complete a survey (Jones, Huffer, et al., 2018). Sixty six parents, whose children were of school-age (and therefore eligible for school BMI screening; mean age 5.5) responded. This study also found that most parents did not believe that BMI report cards caused any negative effects such as increased bullying, improper eating or poor

self-image (approximately 69%, all data estimated from figure), with approximately 21% believing that it did and 10% unsure.

Within the RCT by Mickens (2007), only parents of children with overweight or at risk of obesity were surveyed 10 months after the intervention about whether they believed that their child's self-esteem and body image were negatively impacted by the BMI letter. As in the previous study, 70% did not believe it had had a negative impact, 9% felt that it did and 21% did not answer.

## Qualitative studies

Eight studies reported qualitative data; five were from England and three from the USA. The characteristics of the studies are shown in Table 3. Most of the qualitative data concerns the NCMP and was collected around the initial piloting of the programme or the first few years of implementation (2006-2010). It should also be noted that most of these data concerned the older age group (10-11); limited data are available on younger children.

Table 3. Qualitative studies

Reference	Aim	Context (year of data collection)	Sample
Blood and Grogan (2011)	Explore children's perceptions of NCMP and gather recommendations for improvement	UK (England) National Child Measurement Programme (NCMP). (year NR)	Data from: children Year 6; 10-11 year olds 1 school N = 12 participated in interviews and focus groups Measured within previous six months
BMRB (2007)	Explore parents' and children's views of weight measurement	UK (England) Child measurement in preparation for NCMP; measurements were not fed back routinely to parents or children. (2006-2007)	Data from: children and parents Reception (4-5 year olds) and year 6 (9-10 year olds) Number of schools not reported N = 40 family (parent and child) interviews
Grimmett et al. (2008)	To compare parents' and children's reaction to weight measurement and feedback	UK (England) 2 London boroughs Similar to National Child Measurement Programme, during its roll out, but it included year 3 instead of reception year. Researchers measured weight and height individually. Feedback	Data from: children and parents Year 3 (6-7 years) and Year 6 (10-11 years) 6 schools Sample size NR for qualitative data

<b>Reference</b>	<b>Aim</b>	<b>Context (year of data collection)</b>	<b>Sample</b>
		and advice was mailed to parents. (2007)	
Hunsberger (2014)	To explore students' and parents' perceptions of BMI measurement and feedback	USA (Oregon) School district conducted BMI surveillance with children from kindergarten to 6 <sup>th</sup> grade, plus 8 <sup>th</sup> and 11 <sup>th</sup> grade. Feedback to parents, plus advice, were sent to parents of kindergarten to 5 <sup>th</sup> grade children only. (2009)	Data from: children and parents Children: grades 4, 5, 6, 8 and 11 (9-17 years) 5 schools N=49 students and 35 parents in focus groups Parents: kindergarten to 6 <sup>th</sup> grade, 8 <sup>th</sup> and 11 <sup>th</sup> grade
Kubik et al. (2007)	To understand parents' views about height and weight screening and improve programme	USA (Minnesota) Annual height and weight screening in all grades; no routine feedback to parents. (2004-5)	Data from: parents Kindergarten – 6 <sup>th</sup> grade (4-12 years) 2 schools N=71 participated in focus groups
Nyanzi (2011); Nyanzi (2016)	To explore children's reactions to weight measurement and feedback	UK (England) National Child Measurement Programme. Children in year 1 (4-5 years) and year 6 (10-11 years) have height and weight measured in school, usually by a school nurse. Feedback sent to parents. (2010)	Data from: children 10-11 years N=21 interviews
Shucksmith et al. (2007)	To provide implementation data on the introduction of the NCMP	UK (England) National Child Measurement Programme (newly introduced) (2007)	Data from: children and parents Year 6 children (10-11 years) 2 schools N=24 children participated in interviews and focus groups N=3 parents
Stewart (2015)	To examine impacts of physical fitness testing	USA (Georgia) Statewide assessment of height, weight and fitness; feedback sent to parents	Data from: parents 4 <sup>th</sup> -5 <sup>th</sup> grade children (9-11 years) 1 school N=13

The synthesis below brings together the views data under the following thematic headings:

- general experiences of weight monitoring;
- worry and reality;
- being the 'wrong' weight;
- relations with peers, privacy and social support;
- knowing the results; and
- longer-term impacts.

#### *General experiences of weight monitoring*

Studies which aimed to characterise children's views of the process in general found broadly positive or neutral views (Nnyanzi, 2011; Hunsberger, 2014).

In general, the students participating in focus groups perceived the weighing process as a routine, trivial task, having little lasting effect. (authors, Hunsberger, 2014).

Concerns about teasing or bullying were raised in several studies, but in most cases these were worries about what could happen, rather than actual experiences of weighing (BMRB Social Research, 2007; Grimmett et al., 2008; Blood and Grogan, 2011). One study reports that there was very little actual bullying reported (BMRB Social Research, 2007), and several studies do not mention this as an issue. As discussed below, concerns about teasing may be related to height measurement as much as weighing.

'Because you get scared err people might weigh less than you ... and they might start teasing you.' (participant, child, Blood and Grogan, 2011)

Although raised as a potential issue, there was very little mention of stigmatisation or bullying of children following the weighing or measuring exercise. Such reports were confined to year 6 children who mentioned that the exercise could exacerbate existing teasing of certain children in relation to their height and/or their weight. (authors, BMRB Social Research, 2007)

#### *Worry and reality*

The distinction between the anticipation of the process and the actual experience is important. One study finds that many children were very apprehensive before the weighing took place, but mostly relieved when it had been done (Nnyanzi, 2011). The expectation of being teased or bullied, or the uncertainty as to whether results would be shared publicly, was often a focus of worry.

'If there will be loads of children around and we have to line up and everyone would be looking around and stuff and taking the micky out of me then I would worry.'  
(participant, child, p17, BMRB Social Research, 2007)

'[C]hildren were asking me how it was and I said it was ok, children were anxious thinking it was a terrible thing. You could look at the face of the next person and you could see he was absolutely terrified.' (participant, child, Nnyanzi, 2011)

‘At first I felt a bit uncomfortable, I was really worried and I didn’t want to be measured and weighed, but when I saw my friends going in I thought it was okay. After being measured I thought it was quite funny because I had been worrying about it and I didn’t know that there was nothing to worry about, so I started laughing.’ (participant, child, Nnyanzi, 2011)

G4: I was scared if they were gonna tell me if I was overweight or underweight

All: Yeah

G2: Yeah, I was. I thought they’d go like, ‘You’re obese’ or something

All: Yeah

R: Like they were gonna tell you there and then on the spot?

All: Yeah

G5: Or like go into the class and read out your names and say, ‘You’re obese’ or whatever. (participants, children, Shucksmith et al., 2007)

‘Two studies of the NCMP suggest that children had limited information on what was actually involved, and that this gap tended to be filled by rumour, exacerbating the worry felt by some children’ (Shucksmith et al., 2007; Nnyanzi, 2011).

‘Even though children are quite happy to take part in the NCMP, the moments before being measured are characterised with mixed feelings depending on the backgrounds of the children. Many children feel anxious, nervous, and worried, yet with no clear understanding of what happens during the actual measurement. Children rely on each other for information on what is about to happen to them. They ask each other questions about what goes on in the room where actual measurement is taking place.’ (author, Nnyanzi, 2011)

‘[...] the confusion and fear that some children felt about the purpose and practices of the programme.’ (authors, Shucksmith et al., 2007)

### *Being the ‘wrong’ weight*

Two studies of the NCMP suggest that children living with overweight (or, more rarely, underweight) were more subject to worry than those who are not, and more likely to opt out of the measurement process (or be opted out by parents) (BMRB Social Research, 2007; Nnyanzi, 2011). Children who perceived themselves as living with overweight or underweight, and were found not to be, experienced a sense of relief (Nnyanzi, 2011).

Children were concerned that they might be the ‘wrong’ weight (BMRB Social Research, 2007; Shucksmith et al., 2007; Blood and Grogan, 2011; Nnyanzi, 2011; Hunsberger, 2014). However, two studies suggest that they may just as often have been concerned about being the ‘wrong’ height (Shucksmith et al., 2007; Blood and Grogan, 2011). One study suggests that boys were more likely to be concerned about height and girls about weight (Shucksmith et al., 2007), although in the other study girls did express concern about both (Blood and Grogan, 2011). One study finds that worries about being too small were often related to the transition to secondary school: ‘Being teased about being short was a particular concern for these children who were getting

ready for a move from primary school to high school” (authors, Blood and Grogan, 2011).

‘I felt really terrified that my weight might be too much and my height might be too tall or small.’ (participant, child, Blood and Grogan, 2011)

‘Felt puny ... Cause the thing’s so big. When they measure how high you are. It’s like, you pull the thing all the way down from where the last person was, that’s like, taller than me.’ (participant, child, Hunsberger, 2014)

‘[...] it is important to highlight the difficulties children experienced with being ‘small’ as well as ‘big.’ (authors, Shucksmith et al., 2007)

#### *Relations with peers, privacy and social support*

The relation of perceptions of weight monitoring to the social context of relations with peers is complex. Perceptions of what is the ‘wrong’ weight or height are often based on children’s comparison of their own measurements with their peers’.

‘Well, I don’t really like it having it screened in school cuz I’m the smallest one.’ (participant, child, Blood and Grogan, 2011)

‘I’d be upset because their height might be err ok and then mine might be smaller.’ (participant, child, p485, Blood and Grogan, 2011)

‘Her reasons for not wanting to take part were because she perceived other children in her class to be slimmer than her.’ (authors, BMRB Social Research, 2007)

‘If you see them they look pretty worried about it really you know inherently they are thinking they are bigger than others and may be the results will not come back the way I wanted them to come back.’ (participant, parent, Nnyanzi, 2011)

The importance of measurement being private was emphasized in five studies (BMRB Social Research, 2007; Kubik, Story and Rieland, 2007; Shucksmith et al., 2007; Grimmett et al., 2008; Blood and Grogan, 2011). There was some variability across studies in how private the process was: one study reports that most children were satisfied with the level of privacy (Hunsberger, 2014), but in other studies experiences were more mixed (BMRB Social Research, 2007; Kubik, Story and Rieland, 2007; Shucksmith et al., 2007). Children reported feeling uncomfortable when the process was not adequately private and other children could see the measurements, because the location was not visually screened, and/or overhear them being reported (BMRB Social Research, 2007; Shucksmith et al., 2007). One study found that the preference for privacy was expressed more by girls and older children (BMRB Social Research, 2007), and two other studies which emphasised this theme included children in Year 6 rather than younger age groups (Shucksmith et al., 2007; Blood and Grogan, 2011) .

‘The participants stated that they only discussed their height and weight measurements carried out in school with their parents and their best friends who could keep a secret. This secrecy and desire for privacy was widespread among these children.’ (authors, Blood and Grogan, 2011)

‘It was OK because other children didn’t know what your weight was so they couldn’t talk about it.’ (participant, child, Grimmett et al., 2008)

‘But, if somebody was asking me, then I wouldn’t tell them, because I don’t want nobody else to know my weight.’ (participant, Hunsberger, 2014)

‘I have seen kids comment on ‘you’re so short,’ ‘you’re so tall,’ ‘you’re so fat.’ You know, I’ve heard it all there. And I think from very early on they’re very in tune to those things. So maybe to make it more confidential if it’s going to continue.’ (participant, parent, Kubik, Story and Rieland, 2007)

‘Some people could find out how much they weighed cos they hear how much they weigh if they’re standing outside and they could like spread it to other people so it would make them unhappy and everything.’ (participant, child, Shucksmith et al., 2007)

‘However, while there is a clear preference for privacy in the data, children in several studies expressed a preference for being measured with their friends, and thought that social support would help to reduce anxiety about the process.’ (BMRB Social Research, 2007; Blood and Grogan, 2011; Nnyanzi, 2011).

‘[I:] What do you think could be done to make it a better experience?

[P:] Well you could put you could do more people at a time.’ (participant, child, Blood and Grogan, 2011)

‘Children argued that having social support from their friends at the time when their weight and height was measured would help to improve height and weight screenings and to make the screening process as positive as possible.’ (authors, Blood and Grogan, 2011)

‘In contrast, there were children who felt nervous about being weighed and measured on their own and suggested they would prefer to have a friend present. Some Reception Year children pointed to a ‘sad face’ to describe how they would feel about being measured alone.’ (authors, BMRB Social Research, 2007)

‘This enthusiasm is usually exacerbated by the fact that everyone else is taking part in the measurement process. To these children the whole exercise is ex[c]iting, it is fun and they would like to see who is taller than the other.’ (author, Nnyanzi, 2011)

### *Knowing the results*

Children were often keen to know the results of measurement. In some cases there was a social aspect to this, with results becoming the focus of discussion and comparison between children (BMRB Social Research, 2007; Kubik, Story and Rieland, 2007; Shucksmith et al., 2007; Nnyanzi, 2011). Participants in one study suggested that if children were unwilling to share the results this was a sign that they were unhappy with them (Shucksmith et al., 2007).

‘Year 6 children, in particular, expressed a wish to be told their result and described feeling disappointed if they had not received it. Where children had been told their

result, they reported sharing it with their friends and comparing.’ (authors, BMRB Social Research, 2007)

‘G1: But a lot of them just told you the measurements anyway, a lot of the children just shared them.

R: And they weren’t bothered about how much they weighed?

G3: Yeah, but you know if someone doesn’t tell you what their measurements are you know that they’re probably overweight or too tall or something like that.’ (participants, children, Shucksmith et al., 2007)

Children also valued having feedback on their weight for its own sake, or to confirm that their weight was within the normal range (BMRB Social Research, 2007; Shucksmith et al., 2007; Grimmett et al., 2008; Nnyanzi, 2011; Hunsberger, 2014).

‘I think it’s really cool coz it’s a chance to talk about how I feel about myself and I can find out if I need to maybe do a little more exercise or eat a little bit healthier.’ (participant, child, Grimmett et al., 2008)

‘I’d feel better if I knew my weight. That way I can set goals for myself.’ (participant, child, Hunsberger, 2014)

‘I get called names at school for being really skinny and I really don’t like it. I sometimes feel depressed, I feel very angry and I wanna get them back but I can’t get them back because they will all turn against me. I hoped that I can show them the results of the measurement so that they can know I am normal.’ (participant, child, Nnyanzi, 2011)

‘I think I was just curious to see my weight and height.’ (participant, child, Nnyanzi, 2011)

However, the process for feeding back results to the children varied across the studies: where children were not informed of the results, this was felt as a disappointment, and also contributed to a general sense of uncertainty about the process (BMRB Social Research, 2007; Shucksmith et al., 2007). One study reports that children often read their weight measurement from the scales despite specifically not being informed by programme staff (Shucksmith et al., 2007).

‘R: [...] Would you have liked them to have told you how much you weigh and how tall you are?

B1&3: Yeah

B3: They said ‘oh thank you’ and they went to keep going with the next person

B1: It’s like a big mystery.’ (participants, children, Shucksmith et al., 2007)

In one case children did receive the result but only after a long delay, which was frustrating and also contributed to worry about the results, particularly for children who perceived themselves to have weight problems (Nnyanzi, 2011). Two studies reported that children did not understand the results as they were reported in metric units, while children were only used to imperial units, again contributing to a sense of doubt about the process (Shucksmith et al., 2007; Blood and Grogan, 2011).

### *Longer-term impacts*

Relatively little data describes impacts on behaviour or psychological outcomes after the measuring process. Parents in three studies reported that children had become aware of their weight or appearance in a potentially problematic way (Nnyanzi, 2011; Hunsberger, 2014; Stewart, 2015). (It should be noted that general worries from parents that this could happen, without reference to specific experiences, were not included in this synthesis.)

‘The only thing I want to comment on is that this process made [child’s name] aware of something he has never even considered i.e. weight/appearance [...] The end of innocence!’ (participant, parent, Grimmett et al., 2008)

‘She came home crying when the awards [sic] were passed out because she now has the notion that she is fat and should stop eating.’ (participant, parent, Stewart, 2015)

Some children also reported longer-term impacts on behaviour, including weighing themselves more often or changing their diet, and on psychological outcomes including worry about weight. Almost all the data on this come from a single study (Nnyanzi, 2011) and it is unclear how widespread these consequences were.

‘I wasn’t really bothered if, like, I knew the weight or not but now I sort of want to know all the time, I do stand on the weighing scale more often than I used to do before.’ (participant, child, Nnyanzi, 2011)

‘I have noticed changes especially when we got the letter telling him his height and weight and then what it said at the end because, I mean, it said if he continues gaining weight to that effect he could end up getting things like cancer, so since that he has been watching what he eats and he has been going, do you think I am losing weight and things?’ (participant, parent, Nnyanzi, 2011)

‘I sometimes think about it a lot. Yeah, I keep on thinking like when I am by myself I just think I am, like, oh yeah I am overweight. I am worried because I don’t know what to do about it.’ (participant, child, Nnyanzi, 2011)

### **Policy mapping**

As described above, the aim of the policy mapping was to contextualise the NCMP and gain insight into what comparable programmes have been implemented internationally. We included countries with regular weight monitoring of all children, whether or not this formed part of a specific policy. We did not include programmes which only covered a sample of children as part of surveys, research projects etc. Nonetheless, the programmes were diverse in terms of implementation and setting, and arguably with respect to their overall aims. Programmes including BMI monitoring may be intended to facilitate behaviour change and hence reduce child overweight at the level of individual families, to screen children for weight issues so as to target supportive interventions, and/or to generate surveillance data to inform policy at a population level (Henderson et al., 2015; Patel, Sanchez-Vaznaugh and Woodward-Lopez, 2021; Centers for Disease Control and Prevention, 2022); in some cases these

goals may coexist, or not be clearly distinguished. This heterogeneity should be borne in mind in interpreting the findings.

The main findings of the policy mapping are shown in Table 4 below. Some countries have specific policies related to weight monitoring. Some of the US states have weight monitoring as part of general fitness testing, for example, California, Illinois, New York etc. Some European nations have extensive health checks which includes health behaviours, mental health, social wellbeing, vision, hearing as in Finland, Hungary, the Netherlands etc. Although many European countries carry out height and weight monitoring as part of school health services, we found that in some countries (Germany, Ireland, Italy etc.) only a sample of children undergo these types of services. Hence, we did not include them in our analysis. Outside US and European countries, New Zealand and Korea have specific policies on weight monitoring. New Zealand has implemented a comprehensive four stage clinical guidelines for weight management in children and young people.

There is wide variation in which age group weight checking was done and mostly we had a closer look at age above four years. However, it was difficult to identify exact age as some of the policies did not specify age groups. Some of the countries mentioned specific age groups such as in UK, Denmark, Hungary, the Netherlands etc., while most US states mentioned the grades / years in which testing is conducted. Frequency of weight checks ranges from annual checking in Pennsylvania, Georgia and New Zealand to checking once in two years in Hungary to less frequent checking in other countries. In most countries, the policies were implemented by school health services, local health authorities, departments of health and/or ministries of education. We had difficulty in finding clear objectives for some of the country policies. The stated objectives of various country policies generally have wide implications such as informing children, parents and teachers, helping in local planning of resources, providing prevalence data, monitoring obesity trends, measuring impact of policy, developing guidelines, tackling obesity, health promotion etc.

The countries which had the information about how it is shared had some variations in their practices (specific information regarding communication of information after weight checking from some of the countries could not be obtained). The countries which had the information about how it is shared had some variations in their practices. In most cases, only parents were informed (for instance, UK, Arkansas, Massachusetts, Pennsylvania, Georgia and Luxembourg); both parents and children were informed in California, Norway and South Korea. It was interesting to note that Hungary had an electronic system with separate interfaces for students, teachers and parents to see the data entered in the system.

Table 4. Policy mapping results

<b>Country</b> <b>Name of policy</b>	<b>Age group / grade</b> <b>Measurements conducted</b> <b>Responsibility for implementation</b> <b>Stated objectives</b> <b>Communication / feedback of results</b>	<b>Links</b>
England National Child Measurement Programme (NCMP)	<p><b>Age:</b> Reception (age 4-5) and Year 6 (age 10-11)</p> <p><b>Measurements:</b> height and weight</p> <p><b>Implemented by:</b> local authorities and schools</p> <p>Objectives:                      “The programme was set up in line with the government’s strategy to tackle obesity, and to:                      - inform local planning and delivery of services for children                      - gather population-level data to allow analysis of trends in growth patterns and obesity                      - increase public and professional understanding of weight issues in children and be a vehicle for engaging with children and families about healthy lifestyles and weight issues.”</p> <p>How information shared?                      Weight and height information is shared with the parent or carer in a feedback letter and/or phone call. No individual information is shared with the children themselves, teachers or the school.</p>	<p><a href="https://www.gov.uk/government/collections/national-child-measurement-programme">https://www.gov.uk/government/collections/national-child-measurement-programme</a></p> <p><a href="https://digital.nhs.uk/services/national-child-measurement-programme/">https://digital.nhs.uk/services/national-child-measurement-programme/</a></p>
Wales Child Measurement Programme for Wales	<p><b>Age:</b> Reception (age 4-5)</p> <p><b>Measurements:</b> height and weight</p> <p><b>Implemented by:</b> schools, Public Health Wales</p> <p>Objectives:                      “to learn how children in Wales are growing so that NHS Wales can better plan and deliver health services”</p> <p>How information shared?</p>	<p><a href="https://phw.nhs.wales/services-and-teams/child-measurement-programme/">https://phw.nhs.wales/services-and-teams/child-measurement-programme/</a></p>

Country Name of policy	Age group / grade Measurements conducted Responsibility for implementation Stated objectives Communication / feedback of results	Links
	Information is available to parents on request. Results are not routinely fed back to children or parents.	
Scotland Routine child health review	<p><b>Age:</b> Primary 1 (age 4-5)</p> <p><b>Measurements:</b> height and weight</p> <p><b>Objectives:</b> “to estimate the prevalence of overweight and underweight children in primary 1 in Scotland”</p> <p>How information shared?</p> <p>Results recorded on centralised system accessible to school health professionals</p>	<a href="https://publichealthscotland.scot/our-areas-of-work/early-years-and-young-people/child-health-data-and-intelligence/child-weight-and-growth/routine-health-review/">https://publichealthscotland.scot/our-areas-of-work/early-years-and-young-people/child-health-data-and-intelligence/child-weight-and-growth/routine-health-review/</a>
United States Arkansas Act 201 (2007) (amendment to Act 1220) to reduce childhood obesity.	<p><b>Age:</b> kindergarten (age 5-6) and even grades; students in 12<sup>th</sup> grade (age 17-18) are exempt</p> <p><b>Measurements:</b> height and weight</p> <p>Implemented by: Schools</p> <p>Objectives:</p> <ul style="list-style-type: none"> <li>- to determine baseline prevalence of weight problems.</li> <li>- to measure the impact of concurrent policy changes promoting physical activity and healthy eating</li> </ul> <p>How information shared?</p> <p>BMI reports were sent home, confidential child health reports are made available to parents or guardians regardless of the student’s BMI classification</p>	<a href="https://achi.net/wp-content/uploads/2022/02/20222A-Year-18-2020-21-Arkansas-BMI-Report-FINAL.pdf">https://achi.net/wp-content/uploads/2022/02/20222A-Year-18-2020-21-Arkansas-BMI-Report-FINAL.pdf</a>
United States California	<p><b>Age:</b> all students in grades 5 (age 10-11), 7 (age 12-13), and 9 (age 14-15)</p> <p><b>Measurements:</b> Height and weight (part of physical fitness test)</p> <p><b>Implemented by:</b> Local Education Agencies</p> <p>Objectives:</p>	<a href="https://wgetsnapshots.github.io/cde.ca.gov--ds-sp-ai/ta/tg/pf/index.html">https://wgetsnapshots.github.io/cde.ca.gov--ds-sp-ai/ta/tg/pf/index.html</a>

Country Name of policy	Age group / grade Measurements conducted Responsibility for implementation Stated objectives Communication / feedback of results	Links
Education Code Section 60800 (amended in 2003) (Physical Fitness testing)	<ul style="list-style-type: none"> <li>- students to assess and plan personal fitness programs</li> <li>- teachers to design the curriculum for physical education programs</li> <li>- parents and guardians to understand their children’s fitness levels</li> <li>- provides results that are used to monitor changes in the physical fitness of California students</li> </ul> <p>How information shared? Pupils are provided with their individual results after completing the physical performance testing. Results will be mailed home to families in the fall after the spring testing.</p>	<a href="https://www.cde.ca.gov/ta/tg/pf/documents/govreport2003.pdf">https://www.cde.ca.gov/ta/tg/pf/documents/govreport2003.pdf</a>
United States Florida Statute 381.0065(8) (1973) (School health administrative guidelines)	<p><b>Age:</b> kindergarten (age 5-6) and grades 1 (age 6-7), 3 (age 8-9), and 6 (age 11-12) and optionally 9 (age 14-15)</p> <p><b>Measurements:</b> height and weight (as part of growth and development screening)</p> <p><b>Implemented by:</b> school districts and county health departments.</p> <p>Objective: - to provide insight into the student’s physical growth and development</p> <p>How information shared? NA</p>	<p><a href="https://www.floridahealth.gov/5C/programs-and-services/childrens-health/school-health/_documents/administrative-guidelines.pdf">https://www.floridahealth.gov/5C/programs-and-services/childrens-health/school-health/_documents/administrative-guidelines.pdf</a></p> <p><a href="https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5817a3.htm#:~:text=Body%20mass%20index%20(BMI)%20screening,Department%20of%20Health%20(FDOH).">https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5817a3.htm#:~:text=Body%20mass%20index%20(BMI)%20screening,Department%20of%20Health%20(FDOH).</a></p>
United States Massachusetts Body Mass Index (BMI) Screening	<p><b>Age:</b> grades 1 (age 6-7), 4 (age 9-10), 7 (age 12-13), and 10 (age 15-16)</p> <p><b>Measurements:</b> height and weight</p> <p><b>Implemented by:</b> Department of public health</p> <p>Objective:</p>	<a href="https://www.mass.gov/doc/bmi-screening-guidelines-for-schools/download#:~:text=All%2">https://www.mass.gov/doc/bmi-screening-guidelines-for-schools/download#:~:text=All%2</a>

Country Name of policy	Age group / grade Measurements conducted Responsibility for implementation Stated objectives Communication / feedback of results	Links
Guidelines for Schools) Massachusetts Regulations 105 CMR 200.000: Physical examination 200.500	<p>- to provide school staff with the necessary information and tools to successfully collect heights and weights, and provide reliable data to the Massachusetts Department of Public Health (MDPH)</p> <p>- to gather valuable data that can help MDPH monitor trends in childhood obesity and identify possible systems-wide solutions</p> <p>How Information shared? A confidential letter is mailed directly to parents indicating their child's weight status and encouraging discussion with his or her health care provider</p>	0children%20in%20grades%201, addressed%20to%20the%20school%20nurse.
United States Illinois Public Act 93-0966 (2004) Physical fitness assessment	<p><b>Age:</b> grades 1 (age 6-7), 5 (age 10-11), and 9 (age 14-15)</p> <p><b>Measurements:</b> height and weight (as part of physical fitness assessment)</p> <p><b>Implemented by:</b> schools, state board of education</p> <p>Objectives: - to report fitness information to the State Board of Education and to assess student fitness indicators</p> <p>How Information shared? NA</p>	<a href="https://www.ilga.gov/legislation/ilcs/ilcs4.asp?DocName=01050050HArt%2E+28A&amp;ActID=1005&amp;ChapterID=17&amp;SeqStart=175300000&amp;SeqEnd=175800000">https://www.ilga.gov/legislation/ilcs/ilcs4.asp?DocName=01050050HArt%2E+28A&amp;ActID=1005&amp;ChapterID=17&amp;SeqStart=175300000&amp;SeqEnd=175800000</a>
United States New York Education Code Article 19 Section 903, 904 (amended in 2007)	<p><b>Age:</b> school entry or kindergarten (age 5-6) and grades 2 (age 7-8), 4 (age 9-10), 7 (age 12-13), and 10 (age 15-16)</p> <p><b>Measurements:</b> height and weight (as part of Fitnessgram)</p> <p><b>Implemented by:</b> School health provider</p> <p>Objectives:</p>	<a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8814642/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8814642/</a>

Country Name of policy	Age group / grade Measurements conducted Responsibility for implementation Stated objectives Communication / feedback of results	Links
	<p>- to collect, analyse, monitor, and disseminate the prevalence of and trends in obesity and physical fitness among children and adolescents</p> <p>How Information shared? NA</p>	
<p>United States Pennsylvania Growth Screening Section 1402 (a) (3)</p>	<p><b>Age:</b> all school age <b>Measurements:</b> height and weight (BMI screening) <b>Implemented by:</b> Department of Health, school health services</p> <p>Objectives:</p> <ul style="list-style-type: none"> <li>- to monitor growth and development patterns of students</li> <li>- to Identify students who may be at nutritional risk or who may have a common nutritional problem</li> <li>- to notify parents/guardians of screening results with a recommendation to share findings with the student's health care provider for further evaluation and intervention, if necessary</li> </ul> <p>How information shared? Parent/Guardian Notification is sent home for all students even if the student's measurements fall within acceptable range.</p>	<p><a href="https://www.health.pa.gov/topics/school/Pages/Growth-Screen.aspx">https://www.health.pa.gov/topics/school/Pages/Growth-Screen.aspx</a></p>
<p>United States Georgia</p>	<p><b>Age:</b> grades 1-12 (age 6-18) <b>Measurements:</b> Height and weight (as part of Fitness assessment "Fitnessgram") <b>Implemented by:</b> Local school system</p>	<p><a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5692175/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5692175/</a></p>

Country Name of policy	Age group / grade Measurements conducted Responsibility for implementation Stated objectives Communication / feedback of results	Links
Student Health and Physical Education (SHAPE) Act in 2009	<p>Objectives:</p> <ul style="list-style-type: none"> <li>- to maintain a benchmark measurement of fitness among GA students through the Fitnessgram standardized assessment</li> <li>- to increase children's (and families') knowledge of their current health-related fitness levels</li> <li>- to increase children's and families' capacity to develop and implement strategies for personal improvement</li> </ul> <p>How information shared? By handing a piece of paper to parents stating their child's BMI level</p>	<a href="https://amchp.org/wp-content/uploads/2021/05/Georgia-Shape_updated-April-2020.pdf">https://amchp.org/wp-content/uploads/2021/05/Georgia-Shape_updated-April-2020.pdf</a>
Denmark Danish National Child Health Registry	<p><b>Age:</b> 5-6 years, 7-12 years and 13-16 years  <b>Measurements:</b> height, weight  <b>Implemented by:</b> school authorities</p> <p>Objectives: - to provide comprehensive insight into children's health and growth on a national scale by continuously monitoring the health status of Danish children</p> <p>How information shared? NA</p>	<a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10656863/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10656863/</a>
Finland (Finchildren register monitoring)	<p><b>Age:</b> 5-16  <b>Measurements:</b> height, weight (as part of extensive health checks)  <b>Implemented by:</b> school health care</p> <p>Objectives: NA How information shared? NA</p>	<a href="https://www.terveytemme.fi/finlapset/en/index.html">https://www.terveytemme.fi/finlapset/en/index.html</a>

Country Name of policy	Age group / grade Measurements conducted Responsibility for implementation Stated objectives Communication / feedback of results	Links
Hungary (Hungarian national students fitness test)	<p><b>Age:</b> 2nd, 4th, 6th, 8th, 10th, and 12th grades (ages 8, 10, 12, 14, 16, and 18 years)</p> <p><b>Measurements:</b> height and weight (part of NETFIT fitness assessment system)</p> <p><b>Implemented by:</b> school health service</p> <p>Objectives:</p> <ul style="list-style-type: none"> <li>- to help decision makers to form policies and plan interventions in the field of physical activity and physical education</li> </ul> <p>How information shared?</p> <p>Data is entered into an electronic system and are made available to the students, teachers and parents in separate interfaces</p>	<p><a href="https://egeszsegprogram.eu/content/english/MAESZ_english.pdf">https://egeszsegprogram.eu/content/english/MAESZ_english.pdf</a></p> <p><a href="https://www.isca.org/members-updates-detail/387/netfit-fitness-assessment-system-introduced-in-hungarian-schools">https://www.isca.org/members-updates-detail/387/netfit-fitness-assessment-system-introduced-in-hungarian-schools</a></p>
Luxembourg (Health check)	<p><b>Age:</b> 4-13</p> <p><b>Measurement:</b> height and weight</p> <p>Implemented by: Schools</p> <p>Objectives:</p> <ul style="list-style-type: none"> <li>- to detect any risks to the child's health and development in a timely manner in order to be able to take appropriate action</li> </ul> <p>How information shared?</p> <p>Parents are informed in writing of the assessment results and any related health notices</p>	<p><a href="https://www.vdl.lu/en/living/education-and-training/enrolling-your-child-school/school-health-checks">https://www.vdl.lu/en/living/education-and-training/enrolling-your-child-school/school-health-checks</a></p>
Netherlands (school health promotion)	<p><b>Age:</b> 5, 10, 14, and 16</p> <p><b>Measurement:</b> height and weight (as part of health care check-ups)</p> <p>Implemented by: schools</p>	<p><a href="https://www.expatica.com/nl/healthcare/healthcare-">https://www.expatica.com/nl/healthcare/healthcare-</a></p>

Country Name of policy	Age group / grade Measurements conducted Responsibility for implementation Stated objectives Communication / feedback of results	Links
	Objectives: NA How information shared? NA	<a href="#">services/childrens-healthcare-netherlands-154951/</a>
New Zealand (Clinical guidelines for weight management in children and young people)	<b>Age:</b> 5-18 <b>Measurement:</b> height and weight Implemented by: schools Objectives: - four-stage pathway (monitor, assess, manage, maintain) designed to facilitate clinical decision-making for the identification and management of weight gain in children and young people How information shared? NA	<a href="https://www.health.govt.nz/publication/clinical-guidelines-weight-management-new-zealand-children-and-young-people">https://www.health.govt.nz/publication/clinical-guidelines-weight-management-new-zealand-children-and-young-people</a>
Norway (National guideline)	<b>Age:</b> 4, 6, 8 and 13 years <b>Measurement:</b> height and weight Implemented by: Schools Objectives: NA How information shared? When weight concern is identified both the parents, and the child are invited to a consultation	<a href="https://www.fhi.no/globalassets/dokumenterfiler/studier/prosjekter/mixed-methods-communication-weight-protocol.pdf">https://www.fhi.no/globalassets/dokumenterfiler/studier/prosjekter/mixed-methods-communication-weight-protocol.pdf</a>
South Korea (Student Health examination)	<b>Age:</b> 1 <sup>st</sup> and 4 <sup>th</sup> grade in elementary school, freshmen in middle school, freshmen in high school <b>Measurement:</b> Height and weight <b>Implemented by:</b> Ministry of Education Objectives: - to provide strategies to prevent and treat various diseases through early detection	<a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3764254/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3764254/</a>

Country Name of policy	Age group / grade Measurements conducted Responsibility for implementation Stated objectives Communication / feedback of results	Links
	<ul style="list-style-type: none"> <li>- to provide health consultation, proper treatment, and protection for those in whom early-stage disorders are detected</li> <li>- to establish policies to improve student health and implement effective student health promotion projects</li> </ul> <p>How information shared? The schools should notify the students or their guardians about the health examination results</p>	
Sweden (Guidelines for school health care)	<p><b>Age:</b> primary class (age 6) and in grades 1 (age 7), 4 (age 10), 8 (age 14) and 10 (age 16)</p> <p><b>Measurement:</b> height and weight</p> <p><b>Implemented by:</b> school health team</p> <p>Objectives: NA</p> <p>How information shared? NA</p>	<a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4237184/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4237184/</a>

## DISCUSSION

The findings of this review indicate that there is limited robust data on the impacts of weight monitoring on children. The most reliable results are from Madsen et al.'s cluster-randomised trial in California, which found mixed and generally very small impacts on psychosocial outcomes, with most analyses showing no significant change. (The one other randomised trial (Mickens, 2007) has severe methodological limitations, mainly a lack of statistical power, which means its findings are of limited value.) Data from single-group studies, although limited by the lack of control groups, also tend to find no effect on outcomes such as weight-related teasing or self-esteem. Analyses of moderators or subgroups generally find that impacts do not differ depending on gender (Mickens, 2007; Krukowski et al., 2008), ethnicity (Krukowski et al., 2008) or (measured or perceived) weight status (Krukowski et al., 2008; Madsen et al., 2021).

A slightly larger body of studies measure children's experiences of weight monitoring, or parents' reports of impacts on children, using cross-sectional quantitative (survey) methods. These studies concern a range of programmes, mainly in the USA. They generally find rates of dissatisfaction on the order of 10% to 30%, indicating that most parents and children are broadly satisfied with the process.

However, some data indicates that these relatively low figures are compatible with substantially higher rates of discomfort in girls than boys, and in children living with overweight or obesity, or who are dissatisfied with their weight (Kalich et al., 2008; Altman et al., 2022) (although other data show no difference by gender or weight status (Drilen et al., 2024)). These differences may be very large in some cases. One study which found less than 20% of children to be slightly or very dissatisfied with weight monitoring overall reported a figure of over 60% for this outcome in the subgroup of females with overweight or obesity (Kalich et al., 2008); another study found baseline rates of weight-related teasing around 20% for the whole sample (Year 3 and Year 6) but almost 60% for children with overweight in the older age group (Grimmett et al., 2008). Data on other demographic characteristics is limited. One study from the USA reports lower levels of dissatisfaction in Black children (Altman et al., 2022), but two studies find that perceptions of weighing do not differ by ethnicity (Kalich et al., 2008; Drilen et al., 2024). One study also finds much higher rates of dissatisfaction with weight monitoring in schools in lower-SES areas (Drilen et al., 2024); the difference in this study is very large, but no other study analysed SES, and the reasons for this inequality remain unclear. These figures raise some concern that studies which aggregate the whole population of children may not capture negative experiences in some subgroups. As noted, the intervention studies tend to find that impact does not vary significantly between groups, but the observational data – while not presenting a wholly consistent message – indicate that there are sometimes large differences by gender, weight status and SES, suggesting that different subgroups of children may have quite different responses to weight monitoring.

This review aimed to focus on the impacts of weighing rather than weight feedback. However, we did include studies of interventions including feedback as well as weighing (and, in fact, all intervention studies did), although we excluded surveys or

qualitative studies which focused narrowly on perceptions of feedback alone. Madsen et al.'s study was the only one to directly address the difference, with two active intervention arms – one which received weight screening only, and one which also received feedback – as well as a control group (Madsen et al., 2021). Unfortunately, most of their reported analyses combine the two intervention arms; they are only compared for some outcomes (family weight talk, and family encouragement of dieting), and that analysis compares the feedback arm to the weighing-only and control arms combined, making it hard to interpret in terms of a comparison between the two active interventions. Most of these analyses showed no significant difference at one or two years after intervention, although there was a significant increase in family encouragement of dieting in the feedback arm among the ‘very overweight’ group at two years. Thus, while this one analysis does not suggest any major difference between weighing with and without feedback, it is difficult to tease apart the potential impacts of the two in the intervention data, and the findings may relate to feedback as well as weighing.

The qualitative data, which mostly concern the NCMP, similarly do not suggest very widespread adverse consequences of or negative attitudes to weighing, and at least some children are actively enthusiastic and keen to know the results. However, some do report body image issues or excessive weight concern as a result of being weighed. As found in the quantitative data, children living with overweight or obesity may be more worried; there are very limited data on any other differences between groups. The qualitative data mostly comes from children at the older end of the age range (10-11), and there is limited information on the perceptions of younger children.

There are few reports in the qualitative data of actual experiences of teasing or bullying as a direct result of weighing, although concern and worry about this is frequently reported, and children express a strong preference for privacy (although some would prefer to be weighed in friendship groups). The social context of weight monitoring is complex: children generally understand the results in terms of comparisons with their peers, and may often share measurements among themselves, with potentially negative impacts. In many cases children seem not to have been told very much about what was happening, and relied on each other for basic information, exacerbating the sense of apprehension.

The qualitative data suggest that concerns may relate to height measurement as well as weighing, and children worry about being the ‘wrong’ height in the same way that they worry about being the ‘wrong’ weight; this may relate to child age, with one study suggesting it was a focus of concern for children reaching secondary school age. This is a somewhat unexpected finding, which suggests that we should be cautious about framing children’s responses in terms of adult concerns around perceived ideal body shapes. Concerns about body image and disordered eating are not absent from the data, but are not the only relevant context; for example, understanding children’s experiences of school-based assessment might be illuminating. Also, perceptions of height and weight monitoring may be differently patterned, for example by gender or ethnicity; one quantitative survey shows significantly higher dissatisfaction with height measurement, but not weighing, among minority ethnic children (Drilen et al.,

2024). This distinction is not clearly made in much of the evidence, and could be a focus of further research.

Overall, then, the evidence indicates that while there is potential for real harm in some cases, most children do not experience negative psychosocial consequences of weight monitoring. However, some subgroups of children may be more at risk of negative experiences; the evidence on this is inconclusive but suggests that there may be concerns relating to children with overweight or obesity, older girls and (more tentatively) children in lower-SES areas.

The policy mapping demonstrates that school-based weight monitoring programmes have been introduced in a range of settings. Broadly speaking, the data show a contrast between the USA and Europe, such that we might talk of two distinct service models. The programmes in the USA are often legislated specifically by state governments, and all those on which we found information focused narrowly on BMI and/or on physical fitness, with some carried out as part of physical education classes; this context may affect how weighing is understood by participants. Feedback to parents is usually a prominent part of the delivery model (the metaphor of a ‘BMI report card’ is widely used), although feedback to children is less clearly reported. Most of these programmes appear to be limited to weight monitoring and feedback; while they often refer to broader objectives such as planning and monitoring at a population level, it is unclear how these are operationalised, and in practice the main objective seems to be to provide information to parents (with a view, at least implicitly, to changing behaviour so as to reduce child overweight).

In most countries in continental Europe, by contrast, weight monitoring is carried out as part of regular (often annual) check-ups, usually by school nurses (Michaud et al., 2021). These check-ups often include routine healthcare such as vaccinations, vision and hearing tests and so on; in some countries they are very broad and may include discussion of health behaviours, mental health, social and emotional wellbeing, and family or school issues. In this model, measurement of weight is a very minor component of a much wider system (even for those countries which do routinely measure weight for all children). Many of these programmes do not appear to routinely feedback results on weight or BMI to either children or parents (or at least this is not emphasised in relevant policy documents). Rather, the objectives are firstly, to gather data for national surveillance systems, and secondly, to monitor children’s physical and psychosocial health in a broad sense and identify any issues or risks; overweight or obesity can be included in the latter but are not an explicit focus.

## **Comparison with other reviews**

Several other reviews cover similar ground to this one. However, this review has a somewhat more defined focus than some previous reviews, in that we aimed to include only:

- studies of psychosocial impacts on children themselves, rather than the broader views of parents or other stakeholders (we did include parent-reported outcomes, but only if they related to impacts on children);

- studies where children had actually undergone weight monitoring, rather than studies of hypothetical preferences or perceptions; and
- studies of weight monitoring rather than feedback.

This focus distinguishes this review from previous reviews which have focused on feedback (Ames et al., 2020), on parents' views (including hypotheticals) (Tatum et al., 2021), or on the broader pathways accessed through weight monitoring (Hawking, Dezateux and Swinglehurst, 2023). Several recent reviews have a similar focus to this one (Jessen, Overbeck and Køster-Rasmussen, 2023; Wadenkrans, 2023; Sigurðardóttir et al., 2024); however, these have generally included relatively few studies and reported limited analysis of the data (for example, none assessed the quality of the evidence).

## Implications for practice

The results of this review suggest some potential messages that could improve practice. It should be borne in mind that, as noted above, the focus of the review was restricted to exploring the psychosocial consequences of weighing and measuring children and did not cover the whole process of weight monitoring and feedback to parents, the impacts on BMI or behaviours, or the broader contexts in which programmes are implemented. These caveats aside, the following themes emerge from the data:

- *Privacy and sensitivity.* Measurement should be carried out in a way which preserves confidentiality, and which does not allow others to see the results or overhear conversations. This applies to height measurement as well as weight measurement. Staff delivering programmes should be aware that some children may be apprehensive or unhappy about the process, and address their concerns.
- *Information.* Providing clear information to children about the content and aims of the process before they are measured may help to reduce worry and negative experiences. It may also be worth considering whether the broader messages children receive at school can help to reduce concerns about being the 'wrong' weight (or height), and mitigate potential harms (e.g. disordered eating).
- *Attitudes to weight.* The higher rates of negative perceptions among children with overweight or obesity (or those who are unhappy with their weight) may be well grounded in previous experiences of weight-based bullying or exposure to stigmatising narratives around weight. While there are limits to how far programmes can counter broader societal perceptions, there may be scope for schools to address these issues more directly.
- *Programme communication.* The 'branding' of weight monitoring programmes, and the context within which they are delivered – e.g. whether they focus explicitly on weight, or are folded into broader health assessments – may affect how they are experienced. Programmes can generate usable surveillance data without foregrounding weight in communicating with parents or children.

## Evidence gaps and further research

Our findings indicate several potential evidence gaps which call for further research. We found only one robust outcome evaluation of the psychosocial impacts of weight

monitoring, which was conducted in the USA; further outcome research in the UK, ideally using prospective trial designs, would be valuable. In addition, further research, both qualitative and quantitative, would be valuable in several areas:

- studies comparing the impacts of weighing alone with weighing combined with feedback;
- studies of differences between subgroups which may be relevant to inequalities, including ethnicity and socio-economic status;
- implementation studies or process evaluations exploring issues such as staffing, setting, and communication of results to children;
- studies of the experiences of younger children; and
- studies setting experiences of height and weight measurement in the context of broader views and of school experiences more generally.

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## APPENDIX 1. SEARCH STRATEGIES

Ovid MEDLINE(R) ALL

via Ovid <http://ovidsp.ovid.com/>

Date range searched: 1946 to March 01, 2024

Date searched: 4<sup>th</sup> March 2024

Records retrieved: 4227

The MEDLINE strategy below includes the NICE OECD geographic search filter for Ovid Medline and Embase.

Ayiku L, Levay P, Hudson T. The NICE OECD countries' geographic search filters: Part 1-methodology for developing the draft MEDLINE and Embase (Ovid) filters. *J Med Libr Assoc.* 2021 Apr 1;109(2):258-266. doi: 10.5195/jmla.2021.978. PMID: 34285668; PMCID: PMC8270368.

1 exp Child/ and (Obesity/ or Overnutrition/ or Overweight/ or Body Mass Index/ or Body Weight/ or Ideal Body Weight/ or Waist Circumference/ or Waist-Height Ratio/) (64512)

2 Pediatric Obesity/ (14479)

3 ((p?ediatric\* or child\* or preschool\* or pre-school\* or school child\* or school age\* or underage\* or under-age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescen\* or preteen\* or pre-teen\* or pre teen\* or puberty or prepuberty or pre-puberty or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\*) adj4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*)).ti,ab. (76876)

4 ((schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) adj4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*)).ti,ab. (2757)

5 or/1-4 (113092)

6 (Mass Screening/ or Population Surveillance/ or Public Health Surveillance/) and (Obesity/ or Overnutrition/ or Overweight/ or Body Mass Index/ or Body Weight/ or Ideal Body Weight/ or Waist Circumference/ or Waist-Height Ratio/) (4614)

7 ((weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\*) adj3 (screen\* or monitor\* or check\* or feedback or program\* or

routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or record\*).ti,ab. (92701)

8 (weight-screening or weight-monitoring).ti,ab. (407)

9 (waist circumference adj2 (screen\* or monitor\* or check\* or feedback or program\* or routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or record\*).ti,ab. (2265)

10 ((weigh or weighs or weighing or weighed or weight or weights) adj4 communicat\*).ti,ab. (310)

11 (growth adj monitor\*).ti,ab. (1092)

12 or/6-11 (98975)

13 5 and 12 (17790)

14 Schools/ (53169)

15 (school\* or highschool\* or high-school\* or community primar\*).ti,ab. (351584)

16 ((primary or secondary or independent\* or private\* or public\* or grammar or boarding or special or parish or religious or parochial or elementary or middle or compulsory) adj2 educat\*).ti,ab. (31199)

17 or/14-16 (380831)

18 17 and 12 (6820)

19 13 or 18 (19884)

20 exp "Feeding and Eating Disorders"/ (37114)

21 (anorex\* or bulimi\* or orthorexi\* or diabulimi\*).ti,ab. (43588)

22 ((food or diet\* or eat\*) adj2 (restrict\* or disorder\* or restrain\* or disturb\* or abnormal\* or maladaptive)).ti,ab. (53622)

23 Body Dysmorphic Disorders/ (1292)

24 ((body or bodily) adj3 (dysmorphi\* or dissatif\* or unsatisf\* or unhapp\*).ti,ab. (1607)

25 (weight adj (perception\* or concern\*).ti,ab. (1718)

26 ((image or self-image or appearance) adj2 (disorder\* or distort\* or distress\*).ti,ab. (3161)

27 Mental Health/ (65863)

28 (mental\* adj3 (health\* or well\* or disorder\* or ill\* or distress\* or harm\*).ti,ab. (309084)

29 ((emotional\* or psychological\*) adj (well\* or impact\* or stress\* or distress\* or trauma\*).ti,ab. (85949)

30 ((emotional\* or psycho\* or negative) adj (harm\* or consequence\*).ti,ab. (21193)

31 (confidence or esteem or self-esteem or self-worth or self worth).ti,ab. (716028)

32 Psychosocial Functioning/ (411)

33 psychosocial functioning.ti,ab. (5529)

34 Weight Prejudice/ (246)

35 ((weight or fat or obes\* or anti-fat) adj2 bias\*).ti,ab. (993)

36 ((fat or obes\*) adj2 (phobia\* or sham\*).ti,ab. (233)

37 Bullying/ (6691)

38 (bully\* or tease\* or teasing or stigma\* or prejudice\* or discriminat\*).ti,ab. (365625)

39 ((adverse\* or negative\*) adj (effect\* or affect\* or outcome\* or impact\*).ti,ab. (485448)

40 harm\*.ti,ab. (255321)

41 or/20-40 (2170506)

42 19 and 41 (3857)

43 ((parent\* or guardian\* or caregiver\* or care-giver\* or mother\* or father\* or mum\* or dad\* or family\* or families or child\* or school child\* or school age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescenc\* or preteen\* or pre-teen\* or pre teen\* or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\* or schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) and (attitud\* or opinion\* or percept\* or perceive\* or view\* or impression\* or interview\* or survey\* or respon\*).ti. (73502)

44 ((parent\* or guardian\* or caregiver\* or care-giver\* or mother\* or father\* or mum\* or dad\* or family\* or families or child\* or school child\* or school age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescenc\* or preteen\* or pre-teen\* or pre teen\* or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\* or schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) adj4 (attitud\* or opinion\* or percept\* or perceive\* or view\* or impression\* or interview\* or survey\* or respon\*).ab. (162891)

45 or/43-44 (210314)

46 45 and (13 or 18) (2236)

47 42 or 46 (5490)

48 (National Child Measurement Programme\* or NCMP).ti,ab. (115)

49 "Project EAT".ti,ab. (171)

50 or/48-49 (286)

51 50 and (45 or 41) (120)

52 47 or 51 (5585)

53 afghanistan/ or africa/ or africa, northern/ or africa, central/ or africa, eastern/ or "africa south of the sahara"/ or africa, southern/ or africa, western/ or albania/ or algeria/ or andorra/ or angola/ or "antigua and barbuda"/ or argentina/ or armenia/ or azerbaijan/ or bahamas/ or bahrain/ or bangladesh/ or barbados/ or belize/ or benin/ or bhutan/ or bolivia/ or borneo/ or "bosnia and herzegovina"/ or botswana/ or brazil/ or brunei/ or bulgaria/ or burkina faso/ or burundi/ or cabo verde/ or cambodia/ or cameroon/ or central african republic/ or chad/ or exp china/ or comoros/ or congo/ or cote d'ivoire/ or croatia/ or cuba/ or "democratic republic of the congo"/ or cyprus/ or djibouti/ or dominica/ or dominican republic/ or ecuador/ or egypt/ or el salvador/ or equatorial guinea/ or eritrea/ or eswatini/ or ethiopia/ or fiji/ or gabon/ or gambia/ or "georgia (republic)"/ or ghana/ or grenada/ or guatemala/ or guinea/ or guinea-bissau/ or guyana/ or haiti/ or honduras/ or independent state of samoa/ or exp india/ or indian ocean islands/ or indochina/ or indonesia/ or iran/ or iraq/ or jamaica/ or jordan/ or kazakhstan/ or kenya/ or kosovo/ or kuwait/ or kyrgyzstan/ or laos/ or lebanon/ or liechtenstein/ or lesotho/ or liberia/ or libya/ or madagascar/ or malaysia/ or malawi/ or mali/ or malta/ or mauritania/ or mauritius/ or mekong valley/ or melanesia/ or micronesia/ or monaco/ or mongolia/ or montenegro/ or morocco/ or mozambique/ or myanmar/ or namibia/ or nepal/ or nicaragua/ or niger/ or nigeria/ or oman/ or pakistan/ or palau/ or exp panama/ or papua new guinea/ or paraguay/ or peru/ or philippines/ or qatar/ or "republic of belarus"/ or "republic of north macedonia"/ or romania/ or exp russia/ or rwanda/ or "saint kitts and nevis"/ or saint lucia/ or "saint vincent and the grenadines"/ or "sao tome and principe"/ or saudi arabia/ or serbia/ or sierra leone/ or senegal/ or seychelles/ or singapore/ or somalia/ or south africa/ or south sudan/ or sri lanka/ or sudan/ or suriname/ or syria/ or taiwan/ or tajikistan/ or tanzania/ or thailand/ or timor-leste/ or togo/ or tonga/ or "trinidad and tobago"/ or tunisia/ or turkmenistan/ or uganda/ or ukraine/ or united arab emirates/ or uruguay/ or uzbekistan/ or vanuatu/ or venezuela/ or vietnam/ or west indies/ or yemen/ or zambia/ or zimbabwe/ (1329627)

54 "Organisation for Economic Co-Operation and Development"/ (595)

55 australasia/ or exp australia/ or austria/ or baltic states/ or belgium/ or exp canada/ or chile/ or colombia/ or costa rica/ or czech republic/ or exp denmark/ or estonia/ or europe/ or finland/ or exp france/ or exp germany/ or greece/ or hungary/ or iceland/ or ireland/ or israel/ or exp italy/ or exp japan/ or korea/ or latvia/ or lithuania/ or luxembourg/ or mexico/ or netherlands/ or new zealand/ or north america/ or exp norway/ or poland/ or portugal/ or exp "republic of korea"/ or "scandinavian and nordic countries"/ or slovakia/ or slovenia/ or spain/ or sweden/ or switzerland/ or turkey/ or exp united kingdom/ or exp united states/ (3535337)

56 European Union/ (17923)

57 Developed Countries/ (21493)

- 58 or/54-57 (3551575)
- 59 53 not 58 (1239096)
- 60 52 not 59 (4818)
- 61 limit 60 to yr="2004 -Current" (4346)
- 62 limit 61 to english language (4254)
- 63 exp animals/ not humans.sh. (5200495)
- 64 62 not 63 (4235)
- 65 remove duplicates from 64 (4227)

Key:

/ or .sh. = indexing term (Medical Subject Heading: MeSH)

exp = exploded indexing term (MeSH)

\* = truncation

? = wildcard for 0-1 letters

ti,ab = terms in either title or abstract fields

adj3 = terms within three words of each other (any order)

Embase

via Ovid <http://ovidsp.ovid.com/>

Date range searched: 1974 to 2024 March 01

Date searched: 4<sup>th</sup> March 2024

Records retrieved: 2470

The Embase strategy below includes the NICE OECD geographic search filter for Ovid Medline and Embase.

Ayiku L, Levay P, Hudson T. The NICE OECD countries' geographic search filters: Part 1-methodology for developing the draft MEDLINE and Embase (Ovid) filters. *J Med Libr Assoc.* 2021 Apr 1;109(2):258-266. doi: 10.5195/jmla.2021.978. PMID: 34285668; PMCID: PMC8270368.

- 1 exp child/ and (obesity/ or overnutrition/ or body mass/ or body weight/ or ideal body weight/ or waist circumference/ or waist to height ratio/) (160337)
- 2 childhood obesity/ (22286)
- 3 ((p?ediatric\* or child\* or preschool\* or pre-school\* or school child\* or school age\* or underage\* or under-age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescen\* or preteen\* or pre-teen\* or pre teen\* or puberty or prepuberty or pre-puberty or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\*) adj4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*).ti,ab. (108639)
- 4 ((schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) adj4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*).ti,ab. (3626)
- 5 or/1-4 (218934)
- 6 (mass screening/ or population surveillance/ or public health surveillance/) and (obesity/ or overnutrition/ or body mass/ or body weight/ or ideal body weight/ or waist circumference/ or waist to height ratio/) (3110)
- 7 ((weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\*) adj3 (screen\* or monitor\* or check\* or feedback or program\* or routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or record\*).ti,ab. (142680)
- 8 (weight-screening or weight-monitoring).ti,ab. (673)
- 9 (waist circumference adj2 (screen\* or monitor\* or check\* or feedback or program\* or routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or record\*).ti,ab. (3687)
- 10 ((weigh or weighs or weighing or weighed or weight or weights) adj4 communicat\*).ti,ab. (421)
- 11 (growth adj monitor\*).ti,ab. (1349)
- 12 or/6-11 (149114)
- 13 5 and 12 (28612)
- 14 school/ or primary school/ (89804)
- 15 (school\* or highschool\* or high-school\* or community primar\*).ti,ab. (434595)
- 16 ((primary or secondary or independent\* or private\* or public\* or grammar or boarding or special or parish or religious or parochial or elementary or middle or compulsory) adj2 educat\*).ti,ab. (39872)
- 17 or/14-16 (476335)

- 18 17 and 12 (9595)
- 19 13 or 18 (31384)
- 20 exp eating disorder/ (66599)
- 21 (anorex\* or bulimi\* or orthorexi\* or diabulimi\*).ti,ab. (61504)
- 22 ((food or diet\* or eat\*) adj2 (restrict\* or disorder\* or restrain\* or disturb\* or abnormal\* or maladaptive)).ti,ab. (70960)
- 23 body dysmorphic disorder/ (3897)
- 24 ((body or bodily) adj3 (dysmorphi\* or dissatif\* or unsatisf\* or unhapp\*)).ti,ab. (2146)
- 25 (weight adj (perception\* or concern\*)).ti,ab. (2036)
- 26 ((image or self-image or appearance) adj2 (disorder\* or distort\* or distress\*)).ti,ab. (3881)
- 27 mental health/ (221324)
- 28 (mental\* adj3 (health\* or well\* or disorder\* or ill\* or distress\* or harm\*)).ti,ab. (390389)
- 29 ((emotional\* or psychological\*) adj (well\* or impact\* or stress\* or distress\* or trauma\*)).ti,ab. (114683)
- 30 ((emotional\* or psycho\* or negative) adj (harm\* or consequence\*)).ti,ab. (27067)
- 31 (confidence or esteem or self-esteem or self-worth or self worth).ti,ab. (902295)
- 32 social vulnerability/ (917)
- 33 psychosocial functioning.ti,ab. (7503)
- 34 weight bias/ (413)
- 35 ((weight or fat or obes\* or anti-fat) adj2 bias\*).ti,ab. (1227)
- 36 ((fat or obes\*) adj2 (phobia\* or sham\*)).ti,ab. (341)
- 37 bullying/ (10892)
- 38 (bully\* or tease\* or teasing or stigma\* or prejudice\* or discriminat\*).ti,ab. (455277)
- 39 ((adverse\* or negative\*) adj (effect\* or affect\* or outcome\* or impact\*)).ti,ab. (657703)
- 40 harm\*.ti,ab. (317577)
- 41 or/20-40 (2845970)
- 42 19 and 41 (5825)

43 ((parent\* or guardian\* or caregiver\* or care-giver\* or mother\* or father\* or mum\* or dad\* or family\* or families or child\* or school child\* or school age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescen\* or preteen\* or pre-teen\* or pre teen\* or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\* or schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) and (attitud\* or opinion\* or percept\* or perceive\* or view\* or impression\* or interview\* or survey\* or respon\*)).ti. (85619)

44 ((parent\* or guardian\* or caregiver\* or care-giver\* or mother\* or father\* or mum\* or dad\* or family\* or families or child\* or school child\* or school age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescen\* or preteen\* or pre-teen\* or pre teen\* or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\* or schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) adj4 (attitud\* or opinion\* or percept\* or perceive\* or view\* or impression\* or interview\* or survey\* or respon\*)).ab. (214411)

45 or/43-44 (268195)

46 45 and (13 or 18) (3060)

47 42 or 46 (8112)

48 (National Child Measurement Programme\* or NCMP).ti,ab. (179)

49 "Project EAT".ti,ab. (199)

50 or/48-49 (378)

51 50 and (45 or 41) (152)

52 47 or 51 (8220)

53 afghanistan/ or africa/ or "africa south of the sahara"/ or albania/ or algeria/ or andorra/ or angola/ or argentina/ or "antigua and barbuda"/ or armenia/ or exp azerbaijan/ or bahamas/ or bahrain/ or bangladesh/ or barbados/ or belarus/ or belize/ or benin/ or bhutan/ or bolivia/ or borneo/ or exp "bosnia and herzegovina"/ or botswana/ or exp brazil/ or brunei darussalam/ or bulgaria/ or burkina faso/ or burundi/ or cambodia/ or cameroon/ or cape verde/ or central africa/ or central african republic/ or chad/ or exp china/ or comoros/ or congo/ or cook islands/ or cote d'ivoire/ or croatia/ or cuba/ or cyprus/ or democratic republic congo/ or djibouti/ or dominica/ or dominican republic/ or ecuador/ or el salvador/ or egypt/ or equatorial guinea/ or eritrea/ or eswatini/ or ethiopia/ or exp "federated states of micronesia"/ or fiji/ or gabon/ or gambia/ or exp "georgia (republic)"/ or ghana/ or grenada/ or guatemala/ or guinea/ or guinea-bissau/ or guyana/ or haiti/ or honduras/ or exp india/ or exp indonesia/ or iran/ or exp iraq/ or jamaica/ or jordan/ or kazakhstan/ or kenya/ or kiribati/ or kosovo/ or kuwait/ or kyrgyzstan/ or laos/ or lebanon/ or liechtenstein/ or lesotho/ or liberia/ or libyan arab jamahiriya/ or madagascar/ or malawi/ or exp malaysia/ or maldives/ or mali/ or malta/ or mauritania/ or mauritius/ or melanesia/ or moldova/ or monaco/ or mongolia/ or "montenegro (republic)"/ or morocco/ or mozambique/ or myanmar/ or namibia/ or nauru/ or nepal/ or nicaragua/ or niger/ or nigeria/ or niue/ or north africa/ or oman/ or exp

pakistan/ or palau/ or palestine/ or panama/ or papua new guinea/ or paraguay/ or peru/ or philippines/ or polynesia/ or qatar/ or "republic of north macedonia"/ or romania/ or exp russian federation/ or rwanda/ or sahel/ or "saint kitts and nevis"/ or "saint lucia"/ or "saint vincent and the grenadines"/ or saudi arabia/ or senegal/ or exp serbia/ or seychelles/ or sierra leone/ or singapore/ or "sao tome and principe"/ or solomon islands/ or exp somalia/ or south africa/ or south asia/ or south sudan/ or exp southeast asia/ or sri lanka/ or sudan/ or suriname/ or syrian arab republic/ or taiwan/ or tajikistan/ or tanzania/ or thailand/ or timor-leste/ or togo/ or tonga/ or "trinidad and tobago"/ or tunisia/ or turkmenistan/ or tuvalu/ or uganda/ or exp ukraine/ or exp united arab emirates/ or uruguay/ or exp uzbekistan/ or vanuatu/ or venezuela/ or viet nam/ or western sahara/ or yemen/ or zambia/ or zimbabwe/ (1746150)

54 "organisation for economic co-operation and development"/ (2871)

55 exp australia/ or "australia and new zealand"/ or austria/ or baltic states/ or exp belgium/ or exp canada/ or chile/ or colombia/ or costa rica/ or czech republic/ or denmark/ or estonia/ or europe/ or exp finland/ or exp france/ or exp germany/ or greece/ or hungary/ or iceland/ or ireland/ or israel/ or exp italy/ or japan/ or korea/ or latvia/ or lithuania/ or luxembourg/ or exp mexico/ or netherlands/ or new zealand/ or north america/ or exp norway/ or poland/ or exp portugal/ or scandinavia/ or sweden/ or slovakia/ or slovenia/ or south korea/ or exp spain/ or switzerland/ or exp united kingdom/ or "turkey (republic)"/ or exp united states/ or western europe/ (3841885)

56 european union/ (31871)

57 developed country/ (36052)

58 or/54-57 (3876168)

59 53 not 58 (1589428)

60 52 not 59 (7195)

61 limit 60 to yr="2004 -Current" (6666)

62 limit 61 to english language (6518)

63 (animal/ or animal experiment/ or animal model/ or animal tissue/ or nonhuman/) not exp human/ (6927796)

64 62 not 63 (6436)

65 limit 64 to "remove medline records" (2470)

Key:

/ or .sh. = indexing term (Emtree Subject Heading)

exp = exploded indexing term (Emtree)

\* = truncation

? = wildcard for 0-1 letters

ti,ab = terms in either title or abstract fields

adj3 = terms within three words of each other (any order)

APA PsycInfo

via Ovid <http://ovidsp.ovid.com/>

Date range searched: 1806 to February Week 5 2024

Date searched: 4<sup>th</sup> March 2024

Records retrieved: 2063

1 child\*.sh. and (Obesity/ or Overweight/ or Body Mass Index/ or Body Weight/)  
(2837)

2 pediatric obesity.id. (350)

3 ((p?ediatric\* or child\* or preschool\* or pre-school\* or school child\* or school age\* or underage\* or under-age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescen\* or preteen\* or pre-teen\* or pre teen\* or puberty or prepuberty or pre-puberty or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\*) adj4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*)).ti,ab. (14491)

4 ((schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) adj4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*)).ti,ab. (485)

5 or/1-4 (15135)

6 screening.sh. and (Obesity/ or Overweight/ or Body Mass Index/ or Body Weight/)  
(79)

7 ((weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\*) adj3 (screen\* or monitor\* or check\* or feedback or program\* or routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or record\*)).ti,ab. (20284)

8 (weight-screening or weight-monitoring).ti,ab. (81)

9 (waist circumference adj2 (screen\* or monitor\* or check\* or feedback or program\* or routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or record\*)).ti,ab. (317)

- 10 ((weigh or weighs or weighing or weighed or weight or weights) adj4  
communicat\*).ti,ab. (172)
- 11 (growth adj monitor\*).ti,ab. (36)
- 12 or/6-11 (20647)
- 13 5 and 12 (4257)
- 14 Schools/ or Primary Schools/ (40761)
- 15 (school\* or highschool\* or high-school\* or community primar\*).ti,ab. (447594)
- 16 ((primary or secondary or independent\* or private\* or public\* or grammar or  
boarding or special or parish or religious or parochial or elementary or middle or  
compulsory) adj2 educat\*).ti,ab. (48688)
- 17 or/14-16 (471610)
- 18 17 and 12 (2173)
- 19 13 or 18 (5211)
- 20 exp Eating Disorders/ (36805)
- 21 (anorex\* or bulimi\* or orthorexi\* or diabulimi\*).ti,ab. (24664)
- 22 ((food or diet\* or eat\*) adj2 (restrict\* or disorder\* or restrain\* or disturb\* or  
abnormal\* or maladaptive)).ti,ab. (36820)
- 23 body dysmorphic disorder\*.id. (1133)
- 24 ((body or bodily) adj3 (dysmorphi\* or dissatif\* or unsatisf\* or unhapp\*)).ti,ab.  
(1657)
- 25 (weight adj (perception\* or concern\*)).ti,ab. (1469)
- 26 ((image or self-image or appearance) adj2 (disorder\* or distort\* or  
distress\*)).ti,ab. (1508)
- 27 Youth Mental Health/ or Child Mental Health/ or Mental Health/ (96417)
- 28 (mental\* adj3 (health\* or well\* or disorder\* or ill\* or distress\* or harm\*)).ti,ab.  
(327473)
- 29 ((emotional\* or psychological\*) adj (well\* or impact\* or stress\* or distress\* or  
trauma\*)).ti,ab. (73242)
- 30 ((emotional\* or psycho\* or negative) adj (harm\* or consequence\*)).ti,ab. (19525)
- 31 (confidence or esteem or self-esteem or self-worth or self worth).ti,ab. (148302)
- 32 Psychosocial Outcomes/ (766)
- 33 psychosocial functioning.ti,ab. (5627)
- 34 "Obesity (Attitudes Toward)"/ (547)

- 35 ((weight or fat or obes\* or anti-fat) adj2 bias\*).ti,ab. (685)
- 36 ((fat or obes\*) adj2 (phobia\* or sham\*)).ti,ab. (152)
- 37 Bullying/ (11041)
- 38 (bully\* or tease\* or teasing or stigma\* or prejudice\* or discriminat\*).ti,ab. (195726)
- 39 ((adverse\* or negative\*) adj (effect\* or affect\* or outcome\* or impact\*)).ti,ab. (122387)
- 40 harm\*.ti,ab. (81535)
- 41 or/20-40 (905409)
- 42 19 and 41 (1549)
- 43 ((parent\* or guardian\* or caregiver\* or care-giver\* or mother\* or father\* or mum\* or dad\* or family\* or families or child\* or school child\* or school age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescenc\* or preteen\* or pre-teen\* or pre teen\* or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\* or schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) and (attitud\* or opinion\* or percept\* or perceive\* or view\* or impression\* or interview\* or survey\* or respon\*)).ti. (55759)
- 44 ((parent\* or guardian\* or caregiver\* or care-giver\* or mother\* or father\* or mum\* or dad\* or family\* or families or child\* or school child\* or school age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescenc\* or preteen\* or pre-teen\* or pre teen\* or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\* or schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) adj4 (attitud\* or opinion\* or percept\* or perceive\* or view\* or impression\* or interview\* or survey\* or respon\*)).ab. (157368)
- 45 or/43-44 (186000)
- 46 45 and (13 or 18) (1033)
- 47 42 or 46 (2240)
- 48 (National Child Measurement Programme\* or NCMP).ti,ab. (12)
- 49 "Project EAT".ti,ab. (108)
- 50 or/48-49 (120)
- 51 50 and (45 or 41) (70)
- 52 47 or 51 (2301)
- 53 limit 52 to yr="2004 -Current" (2134)
- 54 limit 53 to english language (2069)
- 55 remove duplicates from 54 (2063)

Key:

/ or .sh. = indexing term (American Psychological Association's Thesaurus of Psychological Index Terms)

exp = exploded indexing term (American Psychological Association's Thesaurus of Psychological Index Terms)

\* = truncation

? = wildcard for 0-1 letters

ti,ab = terms in either title or abstract fields

id = key concepts field

adj3 = terms within three words of each other (any order)

HMIC Health Management Information Consortium

via Ovid <http://ovidsp.ovid.com/>

Date range searched: 1979 to November 2023

Date searched: 4<sup>th</sup> March 2024

Records retrieved: 167

1 ((p?ediatric\* or child\* or preschool\* or pre-school\* or school child\* or school age\* or underage\* or under-age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescen\* or preteen\* or pre-teen\* or pre teen\* or puberty or prepuberty or pre-puberty or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\*) adj4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*)).ti,ab. (1362)

2 ((schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) adj4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*)).ti,ab. (63)

3 or/1-2 (1369)

4 ((weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\*) adj3 (screen\* or monitor\* or check\* or feedback or program\* or routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or record\*)).ti,ab. (1230)

5 (weight-screening or weight-monitoring).ti,ab. (5)

- 6 (waist circumference adj2 (screen\* or monitor\* or check\* or feedback or program\* or routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or record\*)).ti,ab. (35)
- 7 ((weigh or weighs or weighing or weighed or weight or weights) adj4 communicat\*).ti,ab. (3)
- 8 (growth adj monitor\*).ti,ab. (19)
- 9 or/4-8 (1265)
- 10 3 and 9 (356)
- 11 (school\* or highschool\* or high-school\* or community primar\*).ti,ab. (8932)
- 12 ((primary or secondary or independent\* or private\* or public\* or grammar or boarding or special or parish or religious or parochial or elementary or middle or compulsory) adj2 educat\*).ti,ab. (947)
- 13 or/11-12 (9643)
- 14 13 and 9 (183)
- 15 10 or 14 (415)
- 16 (anorex\* or bulimi\* or orthorexi\* or diabulimi\*).ti,ab. (218)
- 17 ((food or diet\* or eat\*) adj2 (restrict\* or disorder\* or restrain\* or disturb\* or abnormal\* or maladaptive)).ti,ab. (406)
- 18 body dysmorphic disorder\*.ti,ab. (9)
- 19 ((body or bodily) adj3 (dysmorphi\* or dissatif\* or unsatisf\* or unhapp\*)).ti,ab. (10)
- 20 (weight adj (perception\* or concern\*)).ti,ab. (22)
- 21 ((image or self-image or appearance) adj2 (disorder\* or distort\* or distress\*)).ti,ab. (9)
- 22 (mental\* adj3 (health\* or well\* or disorder\* or ill\* or distress\* or harm\*)).ti,ab. (23470)
- 23 ((emotional\* or psychological\*) adj (well\* or impact\* or stress\* or distress\* or trauma\*)).ti,ab. (1388)
- 24 ((emotional\* or psycho\* or negative) adj (harm\* or consequence\*)).ti,ab. (378)
- 25 (confidence or esteem or self-esteem or self-worth or self worth).ti,ab. (9631)
- 26 psychosocial functioning.ti,ab. (51)
- 27 ((weight or fat or obes\* or anti-fat) adj2 bias\*).ti,ab. (13)
- 28 ((fat or obes\*) adj2 (phobia\* or sham\*)).ti,ab. (1)

- 29 (bully\* or tease\* or teasing or stigma\* or prejudice\* or discriminat\*).ti,ab.  
(4429)
- 30 ((adverse\* or negative\*) adj (effect\* or affect\* or outcome\* or impact\*)).ti,ab.  
(3073)
- 31 harm\*.ti,ab. (4671)
- 32 or/16-31 (43348)
- 33 15 and 32 (124)
- 34 ((parent\* or guardian\* or caregiver\* or care-giver\* or mother\* or father\* or mum\* or dad\* or family\* or families or child\* or school child\* or school age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescen\* or preteen\* or pre-teen\* or pre teen\* or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\* or schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) and (attitud\* or opinion\* or percept\* or perceive\* or view\* or impression\* or interview\* or survey\* or respon\*)).ti. (1784)
- 35 ((parent\* or guardian\* or caregiver\* or care-giver\* or mother\* or father\* or mum\* or dad\* or family\* or families or child\* or school child\* or school age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescen\* or preteen\* or pre-teen\* or pre teen\* or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\* or schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) adj4 (attitud\* or opinion\* or percept\* or perceive\* or view\* or impression\* or interview\* or survey\* or respon\*)).ab. (4324)
- 36 or/34-35 (5537)
- 37 36 and (10 or 14) (63)
- 38 33 or 37 (171)
- 39 (National Child Measurement Programme\* or NCMP).ti,ab. (74)
- 40 "Project EAT".ti,ab. (5)
- 41 or/39-40 (79)
- 42 41 and (36 or 32) (7)
- 43 38 or 42 (176)
- 44 limit 43 to yr="2004 -Current" (170)
- 45 remove duplicates from 44 (167)

Key:

\* = truncation

? = wildcard for 0-1 letters

ti,ab = terms in either title or abstract fields

adj3 = terms within three words of each other (any order)

Social Policy and Practice

via Ovid <http://ovidsp.ovid.com/>

Date range searched: Inception – February 2024

Date searched: 4<sup>th</sup> March 2024

Records retrieved: 47

1 ((p?ediatric\* or child\* or preschool\* or pre-school\* or school child\* or school age\* or underage\* or under-age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescen\* or preteen\* or pre-teen\* or pre teen\* or puberty or prepuberty or pre-puberty or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\*) adj4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*)).ti,ab. (721)

2 ((schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) adj4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*)).ti,ab. (22)

3 or/1-2 (723)

4 ((weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\*) adj3 (screen\* or monitor\* or check\* or feedback or program\* or routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or record\*)).ti,ab. (391)

5 (weight-screening or weight-monitoring).ti,ab. (6)

6 (waist circumference adj2 (screen\* or monitor\* or check\* or feedback or program\* or routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or record\*)).ti,ab. (2)

7 ((weigh or weighs or weighing or weighed or weight or weights) adj4 communicat\*).ti,ab. (2)

8 (growth adj monitor\*).ti,ab. (1)

9 or/4-8 (395)

10 3 and 9 (137)

11 (school\* or highschool\* or high-school\* or community primar\*).ti,ab. (36236)

- 12 ((primary or secondary or independent\* or private\* or public\* or grammar or boarding or special or parish or religious or parochial or elementary or middle or compulsory) adj2 educat\*).ti,ab. (4718)
- 13 or/11-12 (38151)
- 14 13 and 9 (76)
- 15 10 or 14 (164)
- 16 (anorex\* or bulimi\* or orthorexi\* or diabulimi\*).ti,ab. (259)
- 17 ((food or diet\* or eat\*) adj2 (restrict\* or disorder\* or restrain\* or disturb\* or abnormal\* or maladaptive)).ti,ab. (605)
- 18 body dysmorphic disorder\*.ti,ab. (17)
- 19 ((body or bodily) adj3 (dysmorphi\* or dissatif\* or unsatisf\* or unhapp\*)).ti,ab. (17)
- 20 (weight adj (perception\* or concern\*)).ti,ab. (8)
- 21 ((image or self-image or appearance) adj2 (disorder\* or distort\* or distress\*)).ti,ab. (8)
- 22 (mental\* adj3 (health\* or well\* or disorder\* or ill\* or distress\* or harm\*)).ti,ab. (37468)
- 23 ((emotional\* or psychological\*) adj (well\* or impact\* or stress\* or distress\* or trauma\*)).ti,ab. (3940)
- 24 ((emotional\* or psycho\* or negative) adj (harm\* or consequence\*)).ti,ab. (771)
- 25 (confidence or esteem or self-esteem or self-worth or self worth).ti,ab. (7884)
- 26 psychosocial functioning.ti,ab. (159)
- 27 ((weight or fat or obes\* or anti-fat) adj2 bias\*).ti,ab. (5)
- 28 ((fat or obes\*) adj2 (phobia\* or sham\*)).ti,ab. (0)
- 29 (bully\* or tease\* or teasing or stigma\* or prejudice\* or discriminat\*).ti,ab. (13325)
- 30 ((adverse\* or negative\*) adj (effect\* or affect\* or outcome\* or impact\*)).ti,ab. (5302)
- 31 harm\*.ti,ab. (8079)
- 32 or/16-31 (68278)
- 33 15 and 32 (29)
- 34 ((parent\* or guardian\* or caregiver\* or care-giver\* or mother\* or father\* or mum\* or dad\* or family\* or families or child\* or school child\* or school age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescen\* or preteen\* or pre-teen\* or pre

teen\* or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\* or schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) and (attitud\* or opinion\* or percept\* or perceive\* or view\* or impression\* or interview\* or survey\* or respon\*).ti. (6238)

35 ((parent\* or guardian\* or caregiver\* or care-giver\* or mother\* or father\* or mum\* or dad\* or family\* or families or child\* or school child\* or school age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescenc\* or preteen\* or pre-teen\* or pre teen\* or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\* or schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) adj4 (attitud\* or opinion\* or percept\* or perceive\* or view\* or impression\* or interview\* or survey\* or respon\*).ab. (18556)

36 or/34-35 (21886)

37 36 and (10 or 14) (21)

38 33 or 37 (46)

39 (National Child Measurement Programme\* or NCMP).ti,ab. (32)

40 "Project EAT".ti,ab. (0)

41 or/39-40 (32)

42 41 and (36 or 32) (5)

43 38 or 42 (47)

44 limit 43 to yr="2004 -Current" (47)

45 remove duplicates from 44 (47)

Key:

\* = truncation

? = wildcard for 0-1 letters

ti,ab = terms in either title or abstract fields

adj3 = terms within three words of each other (any order)

Cochrane Central Register of Controlled Trials (CENTRAL)

via Wiley <http://onlinelibrary.wiley.com/>

Issue 2 of 12, February 2024

Date searched: 4<sup>th</sup> March 2024

Records retrieved: 1971

- #1 [mh Child] and ([mh ^Obesity] or [mh ^Overnutrition] or [mh ^Overweight] or [mh ^"Body Mass Index"] or [mh ^"Body Weight"] or [mh ^"Ideal Body Weight"] or [mh ^"Waist Circumference"] or [mh ^"Waist-Height Ratio"]) 3905
- #2 [mh ^"Pediatric Obesity"] 2138
- #3 ((p?ediatric\* or child\* or preschool\* or pre NEXT school\* or school child\* or school age\* or underage\* or under NEXT age\* or boy\* or girl\* or kid\* or preadolescen\* or pre NEXT adolescen\* or preteen\* or pre NEXT teen\* or pre teen\* or puberty or prepuberty or pre NEXT puberty or pubescen\* or pre NEXT pubescen\* or pre pubescen\* or juvenil\* or youth\*) NEAR/4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*)):ti,ab 42506
- #4 ((schoolchild\* or school NEXT child\* or school NEXT age\* or schoolboy\* or school NEXT boy\* or schoolgirl\* or school NEXT girl\*) NEAR/4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*)):ti,ab 374
- #5 #1 or #2 or #3 or #4 44244
- #6 ([mh ^"Mass Screening"] or [mh ^"Population Surveillance"] or [mh ^"Public Health Surveillance"]) and ([mh ^Obesity] or [mh ^Overnutrition] or [mh ^Overweight] or [mh ^"Body Mass Index"] or [mh ^"Body Weight"] or [mh ^"Ideal Body Weight"] or [mh ^"Waist Circumference"] or [mh ^"Waist-Height Ratio"]) 120
- #7 ((weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\*) NEAR/3 (screen\* or monitor\* or check\* or feedback or program\* or routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or record\*)):ti,ab 32003
- #8 (weight NEXT screening or weight NEXT monitoring):ti,ab 152
- #9 (waist circumference NEAR/2 (screen\* or monitor\* or check\* or feedback or program\* or routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or record\*)):ti,ab 989
- #10 ((weigh or weighs or weighing or weighed or weight or weights) NEAR/4 communicat\*):ti,ab 41
- #11 (growth NEXT monitor\*):ti,ab 136
- #12 #6 or #7 or #8 or #9 or #10 or #11 32620
- #13 #5 and #12 6591
- #14 [mh ^Schools] 3811

- #15 (school\* or highschool\* or high NEXT school\* or community primar\*):ti,ab  
55409
- #16 ((primary or secondary or independent\* or private\* or public\* or grammar or  
boarding or special or parish or religious or parochial or elementary or middle or  
compulsory) NEAR/2 educat\*):ti,ab 3107
- #17 #14 or #15 or #16 57404
- #18 #17 and #12 2691
- #19 #13 or #18 7985
- #20 [mh "Feeding and Eating Disorders"] 2472
- #21 (anorex\* or bulimi\* or orthorexi\* or diabulimi\*):ti,ab 4852
- #22 ((food or diet\* or eat\*) NEAR/2 (restrict\* or disorder\* or restrain\* or disturb\*  
or abnormal\* or maladaptive)):ti,ab 7621
- #23 [mh ^"Body Dysmorphic Disorders"] 104
- #24 ((body or bodily) NEAR/3 (dysmorphi\* or dissatif\* or unsatisf\* or  
unhapp\*)):ti,ab 168
- #25 (weight NEXT (perception\* or concern\*)):ti,ab 248
- #26 ((image or self NEXT image or appearance) NEAR/2 (disorder\* or distort\* or  
distress\*)):ti,ab 222
- #27 [mh ^"Mental Health"] 3217
- #28 (mental\* NEAR/3 (health\* or well\* or disorder\* or ill\* or distress\* or  
harm\*)):ti,ab 40510
- #29 ((emotional\* or psychological\*) NEXT (well\* or impact\* or stress\* or distress\*  
or trauma\*)):ti,ab 13625
- #30 ((emotional\* or psycho\* or negative) NEXT (harm\* or consequence\*)):ti,ab  
1927
- #31 (confidence or esteem or self NEXT esteem or self NEXT worth or self  
worth):ti,ab 98786
- #32 [mh ^"Psychosocial Functioning"] 27
- #33 psychosocial functioning:ti,ab 3532
- #34 [mh ^"Weight Prejudice"] 21
- #35 ((weight or fat or obes\* or anti NEXT fat) NEAR/2 bias\*):ti,ab 118
- #36 ((fat or obes\*) NEAR/2 (phobia\* or sham\*)):ti,ab 28
- #37 [mh ^Bullying] 247

- #38 (bully\* or tease\* or teasing or stigma\* or prejudice\* or discriminat\*):ti,ab  
15291
- #39 ((adverse\* or negative\*) NEXT (effect\* or affect\* or outcome\* or impact\*)):ti,ab 67553
- #40 harm\*:ti,ab 19070
- #41 #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30 or #31 or #32 or #33 or #34 or #35 or #36 or #37 or #38 or #39 or #40 242965
- #42 #19 and #41 1698
- #43 ((parent\* or guardian\* or caregiver\* or care NEXT giver\* or mother\* or father\* or mum\* or dad\* or family\* or families or child\* or school child\* or school age\* or boy\* or girl\* or kid\* or preadolescen\* or pre NEXT adolescen\* or preteen\* or pre NEXT teen\* or pre teen\* or pubescen\* or pre NEXT pubescen\* or pre pubescen\* or juvenil\* or youth\* or schoolchild\* or school NEXT child\* or school NEXT age\* or schoolboy\* or school NEXT boy\* or schoolgirl\* or school NEXT girl\*) and (attitud\* or opinion\* or percept\* or perceive\* or view\* or impression\* or interview\* or survey\* or respon\*)):ti 5265
- #44 ((parent\* or guardian\* or caregiver\* or care NEXT giver\* or mother\* or father\* or mum\* or dad\* or family\* or families or child\* or school child\* or school age\* or boy\* or girl\* or kid\* or preadolescen\* or pre NEXT adolescen\* or preteen\* or pre NEXT teen\* or pre teen\* or pubescen\* or pre NEXT pubescen\* or pre pubescen\* or juvenil\* or youth\* or schoolchild\* or school NEXT child\* or school NEXT age\* or schoolboy\* or school NEXT boy\* or schoolgirl\* or school NEXT girl\*) NEAR/4 (attitud\* or opinion\* or percept\* or perceive\* or view\* or impression\* or interview\* or survey\* or respon\*)):ab 23404
- #45 #43 or #44 26868
- #46 #45 and (#13 or #18) 552
- #47 #42 or #46 2100
- #48 (National Child Measurement Programme\* or NCMP):ti,ab 56
- #49 "Project EAT":ti,ab 3
- #50 #48 or #49 59
- #51 #50 and (#45 or #41) 37
- #52 #47 or #51 with Publication Year from 2004 to 2024, in Trials 1971

Key:

mh = exploded indexing term (MeSH)

mh ^ = unexploded indexing term (MeSH)

\* = truncation

? = wildcard for 0-1 additional characters

ti,ab = terms in either title or abstract fields

near/3 = terms within three words of each other (any order)

next = terms are next to each other

Cochrane Database of Systematic Reviews (CDSR)

via Wiley <http://onlinelibrary.wiley.com/>

Issue 3 of 12, March 2024

Date searched: 4<sup>th</sup> March 2024

Records retrieved: 57

#1 [mh Child] and ([mh ^Obesity] or [mh ^Overnutrition] or [mh ^Overweight] or [mh ^"Body Mass Index"] or [mh ^"Body Weight"] or [mh ^"Ideal Body Weight"] or [mh ^"Waist Circumference"] or [mh ^"Waist-Height Ratio"]):ti,ab 3905

#2 [mh ^"Pediatric Obesity"] 2138

#3 ((p?ediatric\* or child\* or preschool\* or pre NEXT school\* or school child\* or school age\* or underage\* or under NEXT age\* or boy\* or girl\* or kid\* or preadolescen\* or pre NEXT adolescen\* or preteen\* or pre NEXT teen\* or pre teen\* or puberty or prepuberty or pre NEXT puberty or pubescen\* or pre NEXT pubescen\* or pre pubescen\* or juvenil\* or youth\*) NEAR/4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*)):ti,ab 42506

#4 ((schoolchild\* or school NEXT child\* or school NEXT age\* or schoolboy\* or school NEXT boy\* or schoolgirl\* or school NEXT girl\*) NEAR/4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*)):ti,ab 374

#5 #1 or #2 or #3 or #4 44244

#6 ([mh ^"Mass Screening"] or [mh ^"Population Surveillance"] or [mh ^"Public Health Surveillance"]) and ([mh ^Obesity] or [mh ^Overnutrition] or [mh ^Overweight] or [mh ^"Body Mass Index"] or [mh ^"Body Weight"] or [mh ^"Ideal Body Weight"] or [mh ^"Waist Circumference"] or [mh ^"Waist-Height Ratio"]):ti,ab 120

#7 ((weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\*) NEAR/3 (screen\* or monitor\* or check\* or feedback or program\* or

routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or  
 record\*)):ti,ab 32003

#8 (weight NEXT screening or weight NEXT monitoring):ti,ab 152

#9 (waist circumference NEAR/2 (screen\* or monitor\* or check\* or feedback or  
 program\* or routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\*  
 or record\*)):ti,ab 989

#10 ((weigh or weighs or weighing or weighed or weight or weights) NEAR/4  
 communicat\*):ti,ab 41

#11 (growth NEXT monitor\*):ti,ab 136

#12 #6 or #7 or #8 or #9 or #10 or #1132620

#13 #5 and #12 6591

#14 [mh ^Schools] 3811

#15 (school\* or highschool\* or high NEXT school\* or community primar\*):ti,ab  
 55409

#16 ((primary or secondary or independent\* or private\* or public\* or grammar or  
 boarding or special or parish or religious or parochial or elementary or middle or  
 compulsory) NEAR/2 educat\*):ti,ab 3107

#17 #14 or #15 or #16 57404

#18 #17 and #12 2691

#19 #13 or #18 7985

#20 [mh "Feeding and Eating Disorders"] 2472

#21 (anorex\* or bulimi\* or orthorexi\* or diabulimi\*):ti,ab 4852

#22 ((food or diet\* or eat\*) NEAR/2 (restrict\* or disorder\* or restrain\* or disturb\*  
 or abnormal\* or maladaptive)):ti,ab 7621

#23 [mh ^"Body Dysmorphic Disorders"] 104

#24 ((body or bodily) NEAR/3 (dysmorphi\* or dissatif\* or unsatisf\* or  
 unhapp\*)):ti,ab 168

#25 (weight NEXT (perception\* or concern\*)):ti,ab 248

#26 ((image or self NEXT image or appearance) NEAR/2 (disorder\* or distort\* or  
 distress\*)):ti,ab 222

#27 [mh ^"Mental Health"] 3217

#28 (mental\* NEAR/3 (health\* or well\* or disorder\* or ill\* or distress\* or  
 harm\*)):ti,ab 40510

- #29 ((emotional\* or psychological\*) NEXT (well\* or impact\* or stress\* or distress\* or trauma\*)):ti,ab 13625
- #30 ((emotional\* or psycho\* or negative) NEXT (harm\* or consequence\*)):ti,ab 1927
- #31 (confidence or esteem or self NEXT esteem or self NEXT worth or self worth):ti,ab 98786
- #32 [mh ^"Psychosocial Functioning"] 27
- #33 psychosocial functioning:ti,ab 3532
- #34 [mh ^"Weight Prejudice"] 21
- #35 ((weight or fat or obes\* or anti NEXT fat) NEAR/2 bias\*):ti,ab 118
- #36 ((fat or obes\*) NEAR/2 (phobia\* or sham\*)):ti,ab 28
- #37 [mh ^Bullying] 247
- #38 (bully\* or tease\* or teasing or stigma\* or prejudice\* or discriminat\*):ti,ab 15291
- #39 ((adverse\* or negative\*) NEXT (effect\* or affect\* or outcome\* or impact\*)):ti,ab 67553
- #40 harm\*:ti,ab 19070
- #41 #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30 or #31 or #32 or #33 or #34 or #35 or #36 or #37 or #38 or #39 or #40 242965
- #42 #19 and #41 1698
- #43 ((parent\* or guardian\* or caregiver\* or care NEXT giver\* or mother\* or father\* or mum\* or dad\* or family\* or families or child\* or school child\* or school age\* or boy\* or girl\* or kid\* or preadolescen\* or pre NEXT adolescen\* or preteen\* or pre NEXT teen\* or pre teen\* or pubescen\* or pre NEXT pubescen\* or pre pubescen\* or juvenil\* or youth\* or schoolchild\* or school NEXT child\* or school NEXT age\* or schoolboy\* or school NEXT boy\* or schoolgirl\* or school NEXT girl\*) and (attitud\* or opinion\* or percept\* or perceive\* or view\* or impression\* or interview\* or survey\* or respon\*)):ti 5265
- #44 ((parent\* or guardian\* or caregiver\* or care NEXT giver\* or mother\* or father\* or mum\* or dad\* or family\* or families or child\* or school child\* or school age\* or boy\* or girl\* or kid\* or preadolescen\* or pre NEXT adolescen\* or preteen\* or pre NEXT teen\* or pre teen\* or pubescen\* or pre NEXT pubescen\* or pre pubescen\* or juvenil\* or youth\* or schoolchild\* or school NEXT child\* or school NEXT age\* or schoolboy\* or school NEXT boy\* or schoolgirl\* or school NEXT girl\*) NEAR/4 (attitud\* or opinion\* or percept\* or perceive\* or view\* or impression\* or interview\* or survey\* or respon\*)):ab 23404
- #45 #43 or #44 26868

#46 #45 and (#13 or #18) 552  
 #47 #42 or #46 2100  
 #48 (National Child Measurement Programme\* or NCMP):ti,ab 56  
 #49 "Project EAT":ti,ab 3  
 #50 #48 or #49 59  
 #51 #50 and (#45 or #41) 37  
 #52 #47 or #51 with Cochrane Library publication date Between Jan 2004 and Mar 2024, in Cochrane Reviews 57

Key:

mh = exploded indexing term (MeSH)

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\* = truncation

? = wildcard for 0-1 additional characters

ti,ab = terms in either title or abstract fields

near/3 = terms within three words of each other (any order)

next = terms are next to each other

ERIC

via EBSCO (<https://web.p.ebscohost.com/ehost/search/advanced>)

Date range searched: Inception - 4<sup>th</sup> March 2024

Date searched: 4<sup>th</sup> March 2024

Records retrieved: 41

S53 S47 or S51 Limiters - Published Date: 20040101-20240231 (41)

S52 S47 or S51 (42)

S51 S50 and (S45 or S41) (4)

S50 S48 OR S49 (10)

S49 TI "Project EAT" OR AB "Project EAT" (7)

S48 TI (National Child Measurement Programme\* or NCMP) OR AB (National Child Measurement Programme\* or NCMP) (3)

S47 S42 or S46 (38)

S46 S45 and (S13 or S18) (31)

S45 S43 OR S44 (189,628)

S44 AB ((parent\* or guardian\* or caregiver\* or care-giver\* or mother\* or father\* or mum\* or dad\* or family\* or families or child\* or school child\* or school age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescenc\* or preteen\* or pre-teen\* or pre teen\* or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\* or schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) and (attitud\* or opinion\* or percept\* or perceive\* or view\* or impression\* or interview\* or survey\* or respon\*)) (185,862)

S43 TI ((parent\* or guardian\* or caregiver\* or care-giver\* or mother\* or father\* or mum\* or dad\* or family\* or families or child\* or school child\* or school age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescenc\* or preteen\* or pre-teen\* or pre teen\* or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\* or schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) and (attitud\* or opinion\* or percept\* or perceive\* or view\* or impression\* or interview\* or survey\* or respon\*)) (17,685)

S42 S19 and S41 (12)

S41 S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 (98,180)

S40 TI harm\* OR AB harm\* (11,411)

S39 TI ((adverse\* or negative\*) NEAR (effect\* or affect\* or outcome\* or impact\*)) OR AB ((adverse\* or negative\*) NEAR (effect\* or affect\* or outcome\* or impact\*)) (5)

S38 TI (bully\* or tease\* or teasing or stigma\* or prejudice\* or discriminat\*) OR AB (bully\* or tease\* or teasing or stigma\* or prejudice\* or discriminat\*) (34,562)

S37 DE "Bullying" (6,442)

S36 TI ((fat or obes\*) NEAR2 (phobia\* or sham\*)) OR AB ((fat or obes\*) NEAR2 (phobia\* or sham\*)) (0)

S35 TI ((weight or fat or obes\* or anti-fat) NEAR2 bias\*) OR AB ((weight or fat or obes\* or anti-fat) NEAR2 bias\*) (0)

S34 TI weight prejudice OR AB weight prejudice (4)

S33 TI psychosocial outcome\* OR AB psychosocial outcome\* (412)

S32 TI psychosocial functioning OR AB psychosocial functioning (426)

S31 TI (confidence or esteem or self-esteem or self-worth or self worth) OR AB (confidence or esteem or self-esteem or self-worth or self worth) (35,998)

S30 TI ((emotional\* or psycho\* or negative) NEAR (harm\* or consequence\*)) OR AB ((emotional\* or psycho\* or negative) NEAR (harm\* or consequence\*)) (40)

S29 TI ((emotional\* or psychological\*) NEAR (well\* or impact\* or stress\* or distress\* or trauma\*)) OR AB ((emotional\* or psychological\*) NEAR (well\* or impact\* or stress\* or distress\* or trauma\*)) (2)

S28 TI (mental\* NEAR3 (health\* or well\* or disorder\* or ill\* or distress\* or harm\*)) OR AB (mental\* NEAR3 (health\* or well\* or disorder\* or ill\* or distress\* or harm\*)) (105)

S27 DE "Mental Health" (16,435)

S26 TI ((image or self-image or appearance) NEAR2 (disorder\* or distort\* or distress\*)) OR AB ((image or self-image or appearance) NEAR2 (disorder\* or distort\* or distress\*)) (85)

S25 TI (weight NEAR (perception\* or concern\*)) OR AB (weight NEAR (perception\* or concern\*)) (28)

S24 TI ((body or bodily) NEAR3 (dysmorphi\* or dissatif\* or unsatisf\* or unhapp\*)) OR AB ((body or bodily) NEAR3 (dysmorphi\* or dissatif\* or unsatisf\* or unhapp\*)) (0)

S23 TI body dysmorphic disorder\* or AB body dysmorphic disorder\* (18)

S22 TI ((food or diet\* or eat\*) NEAR2 (restrict\* or disorder\* or restrain\* or disturb\* or abnormal\* or maladaptive)) OR AB ((food or diet\* or eat\*) NEAR2 (restrict\* or disorder\* or restrain\* or disturb\* or abnormal\* or maladaptive)) (7)

S21 TI (anorex\* or bulimi\* or orthorexi\* or diabulimi\*) OR AB (anorex\* or bulimi\* or orthorexi\* or diabulimi\*) (603)

S20 DE "Eating Disorders" (1,448)

S19 S13 or S18 (93)

S18 S17 and S12 (82)

S17 S14 OR S15 OR S16 (598,533)

S16 TI ((primary or secondary or independent\* or private\* or public\* or grammar or boarding or special or parish or religious or parochial or elementary or middle or compulsory) NEAR2 educat\*) OR AB ((primary or secondary or independent\* or private\* or public\* or grammar or boarding or special or parish or religious or parochial or elementary or middle or compulsory) NEAR2 educat\*) (4)

S15 TI (school\* or highschool\* or high-school\* or community primar\*) OR AB (school\* or highschool\* or high-school\* or community primar\*) (598,113)

S14 DE "Schools" (1,919)

S13 S5 and S12 (14)

S12 S6 OR S7 OR S8 OR S9 OR S10 OR S11 (499)

S11 TI (growth NEAR monitor\*) OR AB (growth NEAR monitor\*) (15)

S10 TI ((weigh or weighs or weighing or weighed or weight or weights) NEAR4 communicat\*) OR AB ((weigh or weighs or weighing or weighed or weight or weights) NEAR4 communicat\*) (90)

S9 TI (waist circumference NEAR2 (screen\* or monitor\* or check\* or feedback or program\* or routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or record\*)) OR AB (waist circumference NEAR2 (screen\* or monitor\* or check\* or feedback or program\* or routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or record\*)) (3)

S8 TI (weight-screening or weight-monitoring) OR AB (weight-screening or weight-monitoring) (3)

S7 TI ((weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\*) NEAR3 (screen\* or monitor\* or check\* or feedback or program\* or routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or record\*)) OR AB ((weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\*) NEAR3 (screen\* or monitor\* or check\* or feedback or program\* or routine\* or report\* or track\* or surveil\* or measur\* or assess\* or collect\* or record\*)) (223)

S6 (DE "Screening Tests") and (DE "Obesity" or DE "Body Weight") (94)

S5 S1 OR S2 OR S3 OR S4 (823)

S4 TI ((schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) NEAR4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*)) OR AB ((schoolchild\* or school-child\* or school-age\* or schoolboy\* or school-boy\* or schoolgirl\* or school-girl\*) NEAR4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*)) (129)

S3 TI ((p?ediatric\* or child\* or preschool\* or pre-school\* or school child\* or school age\* or underage\* or under-age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescen\* or preteen\* or pre-teen\* or pre teen\* or puberty or prepuberty or pre-puberty or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\*) NEAR4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*)) OR AB ((p?ediatric\* or child\* or preschool\* or pre-school\* or school child\* or school age\* or underage\* or under-age\* or boy\* or girl\* or kid\* or preadolescen\* or pre-adolescen\* or preteen\* or pre-teen\* or pre teen\* or puberty or prepuberty or pre-puberty or pubescen\* or pre-pubescen\* or pre pubescen\* or juvenil\* or youth\*) NEAR4 (weigh or weighs or weighing or weighed or weight or weights or body mass or BMI or obes\* or overnutrition or overweight\* or underweight\* or malnutrition or malnourish\* or undernourish\*)) (85)

S2 DE "Pediatrics" and (DE "Obesity" or DE "Body Weight") (32)

S1 DE "Children" and (DE "Obesity" or DE "Body Weight") (744)

Key:

DE = indexing term (ERIC Subject Headings)

+ = exploded indexing term

\* = truncation

? = optional wild card character for 0-1 characters

TI OR AB = terms in either title or abstract fields

NEAR3 = terms within three words of each other

ProQuest Dissertations & Theses A&I

via ProQuest (<https://www.proquest.com/>)

Date range searched: Inception – February 2024

Date searched: 4<sup>th</sup> March 2024

Records retrieved: 842

((title((paediatric\* OR pediatric\* OR child\*)) AND abstract(((weigh or weighs or weighing or weighed or weight or weights OR body mass OR BMI OR obes\*) AND (screen\* OR monitor\* OR check\* OR feedback OR program\* OR routine\* OR report\* OR track\* OR surveil\* OR measur\* OR assess\* OR collect\* OR record\*))) AND title((anorex\* OR bulimi\* OR orthorexi\* OR diabulimi\*) OR ((food OR diet\* OR eat\*) AND (restrict\* OR disorder\* OR restrain\* OR disturb\* OR abnormal\* OR maladaptive)) OR body dysmorphic disorder\* OR ((body OR bodily) AND (dysmorphi\* OR dissatif\* OR unsatisf\* OR unhapp\*)) OR (weight AND (perception\* OR concern\*)) OR ((image OR appearance) AND (disorder\* OR distort\* OR distress\*)) OR (mental\* AND (health\* OR well\* OR disorder\* OR ill\* OR distress\* OR harm\*)) OR ((emotional\* OR psychological\*) AND (well\* OR impact\* OR stress\* OR distress\* OR trauma\*)) OR ((emotional\* OR psycho\* OR negative) AND (harm\* OR consequence\*)) OR (confidence OR esteem OR self worth) OR psychosocial functioning OR ((weight OR fat OR obes\* OR anti fat) AND bias\*) OR ((fat OR obes\*) AND (phobia\* OR sham\*)) OR (bully\* OR tease\* OR teasing OR stigma\* OR prejudice\* OR discriminat\*) OR ((adverse\* OR negative\*) AND (effect\* OR affect\* OR outcome\* OR impact\*)) OR harm\*)) OR (title((school\*) AND ((weigh or weighs or weighing or weighed or weight or weights OR body mass OR BMI OR obes\*) AND (screen\* OR monitor\* OR check\* OR feedback OR program\* OR routine\* OR report\* OR track\* OR surveil\* OR measur\* OR assess\* OR collect\* OR record\*)) OR (waist circumference AND (screen\* OR monitor\* OR

check\* OR feedback OR programme\* OR routine\* OR report\* OR track\* OR surveil\* OR  
 measur\* OR assess\* OR collect\* OR record\*) OR (weight communicat\*) AND  
 abstract((anorex\* OR bulimi\* OR orthorexi\* OR diabulimi\*) OR ((food OR diet\* OR  
 eat\*) AND (restrict\* OR disorder\* OR restrain\* OR disturb\* OR abnormal\* OR  
 maladaptive)) OR body dysmorphic disorder\* OR ((body OR bodily) AND (dysmorphi\*  
 OR dissatif\* OR unsatisf\* OR unhapp\*)) OR (weight AND (perception\* OR concern\*))  
 OR ((image OR appearance) AND (disorder\* OR distort\* OR distress\*)) OR (mental\*  
 AND (health\* OR well\* OR disorder\* OR ill\* OR distress\* OR harm\*)) OR ((emotional\*  
 OR psychological\*) AND (well\* OR impact\* OR stress\* OR distress\* OR trauma\*)) OR  
 ((emotional\* OR psycho\* OR negative) AND (harm\* OR consequence\*)) OR (confidence  
 OR esteem OR self worth) OR psychosocial functioning OR ((weight OR fat OR obes\*  
 OR anti fat) AND bias\*) OR ((fat OR obes\*) AND (phobia\* OR sham\*)) OR (bully\* OR  
 tease\* OR teasing OR stigma\* OR prejudice\* OR discriminat\*) OR ((adverse\* OR  
 negative\*) AND (effect\* OR affect\* OR outcome\* OR impact\*)) OR harm\*) OR  
 (title((parent\* OR guardian\* OR caregiver\* OR paediatric\* OR pediatric\* OR child\*))  
 AND abstract((attitud\* OR opinion\* OR percept\* OR perceive\* OR view\* OR  
 impression\* OR interview\* OR survey\* OR respon\*)) AND abstract(((weigh or weighs  
 or weighing or weighed or weight or weights OR body mass OR BMI OR obes\*) AND  
 (screen\* OR monitor\* OR check\* OR feedback OR programme\* OR routine\* OR report\*  
 OR track\* OR surveil\* OR measur\* OR assess\* OR collect\* OR record\*)))) AND  
 pd(20040101-20241231)) AND (la.exact("ENG") AND diskw.exact("obesity" or  
 "childhood obesity" or "children" or "overweight" or "nutrition" or "body mass index"  
 or "parents" or "child" or "parenting" or "child health" or "pediatric obesity" or  
 "pediatrics" or "pediatric" or "weight" or "body image" or "preschool children" or  
 "eating disorders" or "malnutrition" or "eating behaviors" or "caregivers" or "bmi" or  
 "public health" or "weight management" or "weight status" or "childhood obesity  
 prevention" or "eating behavior" or "self-esteem" or "child nutrition" or "health  
 promotion")) AND pd(20040101-20241231) = 842

Key:

title = title field

abstract = abstract field

\* = truncation

la = language

diskw = index term (keyword)

pd = publication date

## APPENDIX 2. RESULTS OF QUALITY ASSESSMENT

Table 5. Randomised controlled trials

		Madsen et al. (2021)	Mickens (2007)
1.	Was true randomisation used for assignment of participants to treatment groups?	Y	Y
2.	Was allocation to treatment groups concealed?	Y	Y
3.	Were treatment groups similar at the baseline?	Y	N
4.	Were participants blind to treatment assignment?	N	N
5.	Were those delivering the treatment blind to treatment assignment?	N	N
6.	Were treatment groups treated identically other than the intervention of interest?	Y	Y
7.	Were outcome assessors blind to treatment assignment?	N	N
8.	Were outcomes measured in the same way for treatment groups?	Y	Y
9.	Were outcomes measured in a reliable way?	Y	Y
10.	Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analysed?	?	?
11.	Were participants analysed in the groups to which they were randomised?	N	N
12.	Was appropriate statistical analysis used?	Y	N
13.	Was the trial design appropriate and any deviations from the standard RCT design (individual randomisation, parallel groups) accounted for in the conduct and analysis of the trial?	Y	N

Table 6. Quasi-experimental studies

		Falconer et al. (2014)	Grimmett et al. (2008)	Krukowski et al. (2008)
1.	Is it clear in the study what is the “cause” and what is the “effect”?	?	Y	Y
2.	Was there a control group?	N	N	N
3.	Were participants included in any comparisons similar?	Y	Y	Y
4.	Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest?	-	-	-
5.	Were there multiple measurements of the outcome, both pre and post the intervention/ exposure?	Y	#	?
6.	Were the outcomes of participants included in any comparisons measured in the same way?	-	-	-
7.	Were outcomes measured in a reliable way?	Y	Y	Y
8.	Was follow-up complete and if not, were differences between groups in terms of their follow-up adequately described and analysed?	N	?	?
9.	Was appropriate statistical analysis used?	Y	Y	Y

Table 7. Analytical cross-sectional studies

		Altman et al. (2022)	Carnes (2011)	Drilen et al. (2024)	Jones, Huffer et al. (2018)	Kalich et al. (2008)
1.	Were the criteria for inclusion in the sample clearly defined?	Y	Y	Y	Y	Y
2.	Were the study subjects and the setting described in detail?	Y	?	Y	?	Y
3.	Was the exposure measured in a valid and reliable way?	Y	?	Y	N	Y
4.	Were objective, standard criteria used for measurement of the condition?	-	-	-	-	-
5.	Were confounding factors identified?	-	-	-	-	-
6.	Were strategies to deal with confounding factors stated?	-	-	-	-	-
7.	Were the outcomes measured in a valid and reliable way?	Y	Y	N	Y	Y
8.	Was appropriate statistical analysis used?	Y	N	Y	N	Y

Table 8. Qualitative research

		Blood and Grogan (2011)	BMRB (2007)	Hunsberger (2014)	Kubik et al. (2007)	Nyanzi (2011)	Shucksmith et al. (2007)	Stewart (2015)
1.	Is there congruity between the stated philosophical perspective and the research methodology?	?	?	?	?	?	?	?
2.	Is there congruity between the research methodology and the research question or objectives?	Y	Y	Y	Y	Y	Y	?
3.	Is there congruity between the research methodology and the methods used to collect data?	Y	Y	Y	Y	Y	Y	Y
4.	Is there congruity between the research methodology and the representation and analysis of data?	Y	Y	Y	Y	Y	Y	Y
5.	Is there congruity between the research methodology and the interpretation of results?	Y	Y	Y	Y	Y	Y	?
6.	Is there a statement locating the researcher culturally or theoretically?	N	N	N	N	Y	N	N
7.	Is the influence of the researcher on the research, and vice-versa, addressed?	N	N	Y	N	Y	N	N
8.	Are participants, and their voices, adequately represented?	Y	Y	Y	Y	Y	Y	Y
9.	Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	Y	N	Y	Y	Y	Y	Y

10.	Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	Y	Y	Y	Y	Y	Y	?
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Key to QA results: Y = yes, N = no, ? = unclear, # = mixed, – = not applicable

The NIHR Policy Research Programme Reviews Facility puts the evidence into development and implementation of health policy through:

- Undertaking policy-relevant systematic reviews of health and social care research
- Developing capacity for undertaking and using reviews
- Producing new and improved methods for undertaking reviews
- Promoting global awareness and use of systematic reviews in decision-making

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The NIHR Policy Research Programme Reviews Facility collaboration has grown out of a previous 'reviews facility' in Health Promotion and Public Health based at the EPPI Centre, and has been funded by the Department of Health and Social Care since 1995.

The views expressed in this work are those of the authors and do not necessarily reflect the views of the collaborating centres or the funder. All errors and omissions remain those of the authors.

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UCL Institute of Education, University College London  
10 Woburn Square, London WC1H 0NR

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