CLEAN: 7/23/22

**Appendix 1. Framework and key questions**



**Appendix 2: Search strategy Pubmed:**

|  |  |
| --- | --- |
| #1 | child[mh] OR child, preschool[mh] OR child\*[tiab] OR adolescent[mh] OR adolesc\*[tiab] |
| #2 | obese[title] OR obesity[title] OR obesity[mh] OR overweight[title] OR overweight[mh] OR bmi[title] OR body mass index[title] OR adiposity[title] OR body composition[title] OR weight status[title] |
| #3 | clinic[tiab] OR clinics[tiab] OR clinician\*[tiab] OR primary care[tiab] OR specialty care[tiab] OR hospital\*[tiab] OR physician\*[tiab] OR treatment[tiab] OR screening[tiab] |
| #4 | #1 AND #2 AND #3 (Filters: English) |
| #5 | cardiovascular diseases[mh] OR metabolic syndrome[mh] OR cholesterol[mh] OR triglycerides[mh] OR hypertension[mh] OR glycated hemoglobin a[mh] OR blood glucose[mh] OR liver function tests[mh] OR depression[mh] OR sleep apnea[mh] OR asthma[mh] |
| #6 | prevalence[mh]) OR risk assessment[mh] OR severity of illness index[mh] |
| #7 | #1 AND #2 AND #3 AND #4 (Filters: English) |
| Final | #4 OR #7 |

**CENTRAL:**

(obese or obesity or overweight or BMI or "body mass index":ti) and (obese or obesity or overweight:ti,ab,kw) and (child or teen or adolescent or youth:ti,ab,kw) and (clinic or clinician or primary care or specialty care or hospital or physician or doctor or health care or medical or treatment or screening:ti,ab,kw) in Trials (Word variations have been searched)

**Appendix 3: Inclusion Criteria**

**Inclusion Criteria for Intervention Studies (KQ1)**

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| **Component** | **Inclusion** | **Exclusion** | **Rationale** |
| Study Aim | Primary study aim is to examine theeffect of a prevention or treatment intervention on weight or weight- related behaviors. | Primary study aim to preventdevelopment of a comorbidity (eg, hypertension).Primary study aim is to examine treatment for a comorbidity (eg, NAFLD).Primary study aim is to examine prevention or treatment for obesity caused by external factors (eg, antipsychotic treatment). | Although prevention of comorbiditiesis important, the goal of this review is to provide actionable evidence for obesity prevention and treatment.Although we want to understand treatment for children who have comorbidities, we want to maintain focus on treatments that can be broadly applied. |
| Study Design | Tests an intervention. Randomizedor nonrandomized comparison group. | Case reports, protocols, abstracts,systematic reviews, meta-analyses, or other non-peer-reviewed articles.Pre-post within-group design (ie, a single group measured before and after treatment).Compares groups without an intervention (eg, activity levels between those with and without obesity). | Comparison groups particularlyimportant for obesity, which can have large regression to the mean effects. |
| Population | Children age 2-18. Studies caninclude young adults up to age 25 if combined with adolescents, or older ages if children are reported separately. | Study sample is all ages <2 years or≥18 years. Study sample is only young adults.Children with exogenous obesity, such as attributable to Prader-Willi syndrome, | Want to include studies that spanthe adolescent to adult transition, a group treated by pediatric providers, but not studies where the primaryages would not be treated by pediatric providers. |

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| **Component** | **Inclusion** | **Exclusion** | **Rationale** |
|  | Children may have other conditions (eg, asthma). | medication (eg, antipsychotics), or known genetic mutations. |  |
| Intervention | Intervention can consist of screening, lifestyle counseling, other specific strategies, medically managed weight loss, pharmaceutical treatment, and surgery. Complementary and alternative medicine approaches will be considered if they meet other criteria. | Intervention does not target obesity as a primary outcome.Intervention targets treatments for specific comorbiditiesIntervention is outside the scope of clinical practice. | Goal is to provide actionable evidence for pediatric providers regarding obesity, not guidance on treating comorbidities, which is covered by other guidelines. |
| Comparator | Comparator is any usual care orintervention that can occur in a clinical setting.Comparison group must be similar (eg, no healthy weight controls). | Comparator is outside of the scopeof clinical practice (eg, comparing clinical treatment to community-only program). | USPSTF required usual or minimalcare control groups. In contrast, we are not creating a combined effect size, and current “usual care” may be more intense than a single visit. Unethical at this point to have a comparator with no healthy lifestyle focus. |
| Outcome | Primary outcomes must be obesity.Acceptable measures include any BMI-based measure (including SDS, percentiles, relative BMI), or weight.Secondary outcomes will be assessed, and can include any CM risk outcome; mental health or QoL;others; behavioral outcomes. Any adverse event. | Weight and height are not clinicallymeasured (eg, self or parent report).Primary outcome is not obesity (eg, primary outcome is reduction in hypertension, although BMI is reported). |  |

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| **Component** | **Inclusion** | **Exclusion** | **Rationale** |
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| Timing | Outcomes must be measured 3months (12 weeks) or more after intervention onset. |  |  |
| Setting | Must be health-care system basedor within the scope of health care practice.Community programs can be included only if there is clinic involvement beyond referral alone (eg, some defined and required clinic follow-up). | Studies include health careproviders only for referral.Studies entirely outside the scope of health care. | Goal is to provide evidence that canbe used in clinical pediatric practice. |
| Country | OECD member countries: Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, The Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, and United States |  |  |
| Language | English |  |  |

**Inclusion Criteria for Comorbidity Studies (KQ2)**

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| **Component** | **Inclusion** | **Exclusion** | **Rationale** |
| Study Aim | Primary study aim is to compare dyslipidemia, hypertension, diabetes, liver function, depression, sleep apnea, or asthma between healthy weight children and those with obesity, or to compare comorbidities by different levels of obesity. | Primary study aim is to report prevalence of comorbidities among a population with obesity with no comparisons. Primary study aim differs, with incidental prevalence reporting. | Goal is to provide evidence that helps clinicians decide on comorbidity screening. |
| Study Design | Any study comparing comorbidities across weight status groups. No specific design limitation. | Case reports, protocols, abstracts, systematic reviews, meta-analyses, or other non- peer-reviewed articles. |  |
| Population | Children ages 2-18. Studies caninclude young adults up to age 25 if combined with adolescents, or older ages if children are reported separately.Children may have other conditions (eg, asthma). | Study sample is all ages <2years or ≥18 years. Study sample is only young adults.Children with exogenous obesity, such as due to Prader-Willi, medication (eg, antipsychotics), or known genetic mutations. | Want to include studies thatspan the adolescent to adult transition, a group treated by pediatric providers, but not studies where the primary ages would not be treated by pediatric providers. |
| Intervention | No requirement. |  |  |
| Comparator | Comorbidity prevalence mustbe compared either with/without obesity or by severity of obesity, using aBMI-based measure. | Obesity defined using waistcircumference, DEXA, or other non-BMI measures. | Goal is to provide evidencethat helps clinicians decide on comorbidity screening. |

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| Outcome/Comorbidity Measures | Lipids: HDL, LDL, triglycerides, total cholesterol; diagnosed unspecified dyslipidemiaBlood pressure: Ambulatory systolic or diastolic; diagnosed hypertensionLiver: ALT, AST; diagnosed NAFLDGlucose metabolism: HbA1c, fasting glucose, insulin, HOMA-IR; diagnosed prediabetes or diabetes; metabolic syndromeObstructive sleep apnea: Diagnosed OSA (from chart or self-report); OSA on sleep studyAsthma: Diagnosed asthma (from chart or self-report)Depression: diagnosed depression; standard depression inventory (eg, BDI, CES-D) | Lipids: other lipid moleculesBlood pressure: 24-hour continuous monitoringLiver: Distribution of fat in the liver without diagnosisGlucose metabolism: other non-standard measuresObstructive sleep apnea: Self- reported “disturbed sleep”; other sleep difficultiesAsthma: Specific lung function parameters only; self-reported “wheezing”Depression: Other mental health diagnoses; other behavioral screens |  |
| Timing | BMI and comorbidity must be measured contemporaneously |  |  |
| Setting |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | Any |  |  |
| Country | OECD member countries: Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, The Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, and United States |  |  |
| Language | English |  |  |

Appendix 4. Full text review guide

 

 APPENDIX 5 – SEE SEPARATE DOCUMENT