**Supplementary Table 1.** PECOS criteria used in the present meta-analysis

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| --- | --- |
| **Parameter** | **Description** |
| **Population** | Inclusion criteria: Clinically healthy subjects aged ≥18 years, all ethnicitiesExclusion criteria: Subjects aged <18 years, pregnant women |
| **Exposure** | High consumption of ultra-processed foods as defined by the NOVA Food Classification System |
| **Comparison** | Low consumption of ultra-processed foods as defined by the NOVA Food Classification System |
| **Outcome** | Any health indicator |
| **Study design** | Inclusion criteria: Cross-sectional studies, prospective cohort studiesExclusion criteria: Review articles, letters to the editor, comments, case reports, case-control studies, randomized controlled trials |

**Supplementary Table 2.** **NIH Quality Assessment Tool**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author, year** | **Q1** | **Q2** | **Q3** | **Q4** | **Q5** | **Q6** | **Q7** | **Q8** | **Q9** | **Q10** | **Q11** | **Q12** | **Q13** | **Q14** | **Quality rating** |
| **CROSS-SECTIONAL STUDIES** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Louzada et al., 2015 6** | Yes | Yes | No | Yes | No | No | No | Yes | Yes | No | Yes | NR | NA | Yes | **Fair** |
| **Juul et al., 2018 7** | Yes | Yes | No | Yes | No | No | No | Yes | Yes | No | Yes | NR | NA | Yes | **Fair** |
| **Lavigne-Robichaud et al., 2018 24** | Yes | Yes | Yes | Yes | No | No | No | Yes | No | No | Yes | NR | NA | Yes | **Poor** |
| **Nasreddine et al., 2018 12** | Yes | Yes | Yes | Yes | Yes | No | No | Yes | No | No | Yes | NR | NA | Yes | **Poor** |
| **Schnabel et al., 2018 25** | Yes | Yes | No | Yes | No | No | No | Yes | Yes | Yes | Yes | NR | NA | Yes | **Fair** |
| **Silva et al., 2018 8** | Yes | Yes | Yes | Yes | No | No | No | Yes | Yes | No | Yes | NR | NA | Yes | **Fair** |
| **Lopes et al., 2019 23** | Yes | Yes | Yes | Yes | No | No | No | Yes | Yes | No | Yes | NR | NA | Yes | **Poor** |
| **Martínez Steele et al., 2019 10** | Yes | Yes | No | Yes | No | No | No | Yes | Yes | No | Yes | NR | NA | Yes | **Fair** |
| **Nardocci et al., 2019 9** | Yes | Yes | Yes | Yes | No | No | No | Yes | No | No | No | NR | NA | Yes | **Poor** |
| **Rauber et al., 2020 26** | Yes | Yes | No | Yes | No | No | No | Yes | Yes | No | Yes | NR | NA | Yes | **Fair** |
| **PROSPECTIVE COHORT STUDIES** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Mendonça et al., 2016 27** | Yes | Yes | No | Yes | No | Yes | Yes | Yes | Yes | No | Yes | NR | Yes | Yes | **Good** |
| **Mendonça et al., 2017 28** | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | No | Yes | NR | Yes | Yes | **Good** |
| **Fiolet et al., 2018 16** | Yes | Yes | NR | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | NR | NR | Yes | **Good** |
| **Adjibade et al., 2019 15** | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | NR | NR | Yes | **Good** |
| **Blanco-Rojo et al., 2019 29** | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | No | Yes | NR | NR | Yes | **Good** |
| **Canhada et al., 2019 34** | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | No | Yes | NR | NR | Yes | **Good** |
| **Gómez-Donoso et al., 2019 30** | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | NR | Yes | Yes | **Good** |
| **Kim et al., 2019 36** | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | No | Yes | NR | Yes | Yes | **Good** |
| **Rico-Campà et al., 2019 31** | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | NR | Yes | Yes | **Good** |
| **Sandoval-Insausti et al., 2019 32** | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | No | No | NR | Yes | Yes | **Fair** |
| **Schnabel et al., 2019 33** | Yes | Yes | No | Yes | No | Yes | Yes | Yes | Yes | No | Yes | NR | Yes  | Yes | **Good** |
| **Srour et al., 2019a 13** | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | NR | Yes  | Yes | **Good** |

Q1 = Was the research question or objective in this paper clearly stated?; Q2 = Was the study population clearly specified and defined?; Q3 = Was the participation rate of eligible persons at least 50%?; Q4 = Were all the subjects selected or recruited from the same or similar populations (including the same time period)? Were inclusion and exclusion criteria for being in the study prespecified and applied uniformly to all participants?; Q5 = Was a sample size justification, power description, or variance and effect estimates provided?; Q6 = For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?; Q7 = Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?; Q8 = For exposures that can vary in amount or level, did the study examine different levels of the exposure as related to the outcome (e.g., categories of exposure, or exposure measured as continuous variable)?; Q9 = Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?; Q10 = Was the exposure(s) assessed more than once over time?; Q11 = Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?; Q12 = Were the outcome assessors blinded to the exposure status of participants?; Q13 = Was loss to follow-up after baseline 20% or less?; Q14 = Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?; NA = Not Applicable; NR = Not Reported