

Supplementary Table 1. Risk assessment of individual studies

Author	Year	Criteria 1	Criteria 2	Criteria 3	Criteria 4	Criteria 5	Criteria 6	Criteria 7	Criteria 8	Criteria 9	Criteria 10	Criteria 11	Criteria 12	Criteria 13	Criteria 14
Møller and Skakkebaek [20]	1999	+	+	+	+	-	NA	-	+	+	+	+	-	-	-
Jacobsen et al. [23]	2000	+	+	+	+	+	-	+	+	+	-	+	NA	+	-
Doria-Rose et al. [21]	2005	+	+	+	+	-	NA	-	+	+	+	+	NA	+	-
Raman et al. [24]	2005	+	+	+	-	-	+	-	+	+	+	-	-	+	-
Groos et al. [37]	2006	+	-	+	-	-	+	-	+	+	-	+	NA	+	NA
Jensen et al. [38]	2009	+	+	+	+	+	+	+	+	+	+	-	NA	+	+
Bener et al. [31]	2009	+	-	+	-	-	NA	-	+	+	+	+	NA	+	-
Salonia et al. [34]	2009	+	+	+	+	-	+	+	+	+	+	+	NA	+	+
Walsh et al. [25]	2009	+	+	+	+	+	+	+	+	+	-	+	+	+	+
Walsh et al. [26]	2010	+	+	+	+	+	+	+	+	+	-	+	+	+	+
Ruhayel et al. [22]	2010	+	+	+	+	-	NA	-	+	+	+	+	-	+	NA
Eisenberg et al. [15]	2011	+	+	+	+	-	+	+	+	+	+	+	+	+	+
Eisenberg et al. [27]	2013	+	+	+	+	+	+	-	+	+	+	+	NA	+	-
Eisenberg et al. [39]	2014	+	+	+	+	+	+	+	+	+	+	+	-	+	+
Eisenberg et al. [28]	2015	+	+	+	+	+	+	-	+	+	+	+	-	+	+
Eisenberg et al. [33]	2015	+	+	+	+	+	NA	-	+	+	+	-	-	+	+
Ventimiglia et al. [32]	2015	+	+	+	+	-	+	+	+	+	+	+	NA	+	+
Hanson et al. [29]	2016	+	+	+	+	-	+	-	+	+	+	+	-	+	-
Eisenberg et al. [16]	2016	+	+	+	+	+	+	+	+	+	+	+	-	+	+
Glazer et al. [35]	2017	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Wang et al. [17]	2018	+	+	+	+	+	+	-	+	+	+	+	-	+	+
Brubaker et al. [36]	2018	+	+	+	+	+	+	-	+	+	+	+	-	+	-
Ferlin et al. [18]	2019	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Kasman et al. [19]	2019	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Al-Jebari et al. [30]	2019	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Glazer et al. [41]	2019	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lundberg et al. [40]	2019	+	+	+	+	+	+	+	+	+	+	+	+	+	+

NA, not applicable.

Criteria 1: Was the research question or objective in this paper clearly stated?

Criteria 2: Was the study population clearly specified and defined?

Criteria 3: Was the participation rate of eligible persons at least 50%?

Criteria 4: 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?

Criteria 5: Were a sample size justification, power description, or variance and effect estimates provided?

Criteria 6: For the analyses in this paper, was the exposure(s) of interest measured prior to the outcome(s) being measured?

Criteria 7: Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?

Criteria 8: For exposures that can vary in amount or level, did the study examine different levels of the exposure as related to the outcome?

Criteria 9: Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?

Criteria 10: Was the exposure(s) assessed more than once over time?

Criteria 11: Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?

Criteria 12: Were the outcome assessors blinded to the exposure status of participants?

Criteria 13: Was loss to follow-up after baseline 20% or less?

Criteria 14: Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?