

Supplementary table 1: Example of full search string (Ovid)

	Searches	Results
1	(Maternal* or prenatal* or perinatal* or gestational* or pregnan*)	1768624
2	(diet*3 or nutrition or fiber or fibre or protein or fat or fatty or carbohydrate or fruit or vegetable or fish or seafood)	7878460
3	child* or toddler* or offspring	3862890
4	(behavior?r or behavior?r disorder* or externali?ing or internali?ing or mental health or mental development or learning disorder* or cogniti*3 or neurocogniti*3 or memory or IQ or executive or ADHD or attention deficit hyperactivity disorder or Attention deficit disorder or oppositional defiant disorder or conduct disorder or development* disability or neurodevelopment* or autism spectrum disorder or hyperkinetic disorder or hyperactivity disorder or language or communication or affective or developmental milestone*)	6446778
5	Combine 1-4	11512
6	Limit 5 to appropriate age group (infant – 12 years of age)	8003
7	Limit 6 to pregnancy	4632
8	Limit 7 to humans	3316
9	Limit to original articles	2974
10	Remove duplicates from 9	2100

Supplementary table 2: Overview of control variables for each study

Confounders	Barker et al (2013)	Bernard et al (2013)	Bolduc et al (2016)	Daniels et al (2004)	Davidson et al (2008)	Gale et al (2008)	Gustafsson et al (2016)**	Hibbeln et al (2007)	Jacka et al (2013)	Julvez et al (2016)	Mendez et al (2008)	Oken, Radensky et al (2008)	Oken et al (2016)	Oken, Østerdal et al (2008)	Pina-Camacho et al (2015)	Sagiv et al (2012)	Steenweg-de Graaff et al (2014)	Valent et al (2013)
Alcohol		X		X		X		X				X		X		X		X
Biomarkers																X		
Birth complications	X														X			
Breastfeeding				X		X		X		X	X	X	X	X				X
Child gender		X		X	X		X	X	X	X	X	X	X	X		X	X	X
Child ADHD medication																X		
Child age at assessment		X		X						X	X	X	X	X		X	X	
Child birth weight					X	X	X			X			X	X				X
Child dietary pattern									X									
Child fish intake											X							X
Child sugary snacks/drinks intake																	X	
Daycare attendance		X				X												X
Ethnicity								X		X		X	X			X	X	X
Fetal growth												X						
Home environment	X			X	X			X					X		X	X		X
Length of gestation		X						X			X	X	X	X				
Marital status	X				X			X	X			X		X	X	X	X	X
Maternal age		X	X		X	X	X	X	X	X		X		X		X	X	X
Maternal energy intake		X					X			X							X	
Maternal diet*			X					X								X		X
Maternal gestational diabetes			X															
Maternal IQ					X	X							X			X		X
Maternal mental health							X		X					X		X	X	
Maternal pre pregnancy BMI												X		X			X	X
Maternal pregnancy weight/weight gain		X					X			X								X
Maternal supplement use			X														X	
Parental learning difficulties														X				
Parity	X	X		X				X		X	X		X	X	X		X	
Paternal age									X									
SES	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Smoking		X		X		X		X	X			X	X	X		X	X	X

\*For some studies where fish intake was the exposure, other maternal dietary components were included in the analysis as confounders.

\*\*All covariates did not significantly correlate with outcome, so these were not included in the final analysis

Supplementary table 3: Evaluation of individual study quality with The Newcastle-Ottawa Scale (NOS) for assessing the quality of non-randomised studies in meta-analyses

		Barker et al (2013)	Bernard et al (2013)	Bolduc et al (2016)	Daniels et al (2004)	Davidson et al (2008)	Gale et al (2008)	Gustafsson et al (2016)	Hibbeln et al (2007)	Jacka et al (2013)	Julvez et al (2016)	Mendez et al (2008)	Oken, Radensky et al (2008)	Oken, Østerdal et al (2008)	Oken et al (2016)	Pina-Camacho et al (2015)	Sagiv et al (2012)	Steenweg-de Graaff et al (2014)	Valent et al (2013)
<b>Selection</b>	<b>1) Representativeness of the exposed cohort:</b> a) truly representative of the average pregnant woman in the community*; b) somewhat representative of the average pregnant woman in the community*; c) selected group of users e.g. nurses, volunteers; d) no description of the derivation of the cohort	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
	<b>2) Selection of the non-exposed cohort:</b> a) drawn from the same community as the exposed cohort*; b) drawn from a different source; c) no description of the derivation of the non-exposed cohort	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	c	a	a
	<b>3) Ascertainment of exposure:</b> a) secure record (e.g. surgical records)*; b) structured interview*; c) written self-report; d) no description	c	c	c	c	a	c	c	c	c	c	c	c	c	c	c	a	c	c
	<b>4) Demonstration that outcome of interest was not present at start of study:</b> a) yes*; b) no	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	c	a	a
<b>Comparability</b>	<b>1) Comparability of cohorts on the basis of the design or analysis:</b>																		
	a) study controls for SES (maternal education and/or income)*	x	x	x	x	x	x	x	x	x	x	x	x	x	a	x	x	x	x
	b) study controls for child dietary factors other than breastfeeding (e.g. dietary patterns, fish intake)*								x		x				x	x			
<b>Outcome</b>	<b>1) Assessment of outcome:</b> a) independent blind assessment*; b) record linkage*; c) self-report; d) no description	a	c	a	c	a	c	c	a/c	c	c	a	a	c	a	c	a	c	a
	<b>2) Was follow-up long enough for outcomes to occur:</b> a) yes*; b) no	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
	<b>3) Adequacy of follow up of cohorts:</b> a) complete follow up - all subjects accounted for*; b) subjects lost to follow up unlikely to introduce bias - less than 20 % lost or description of those lost suggested no difference from those followed*; c) follow up rate < 80% and no description of those lost; d) no statement	c	c	c	c	c	c	c	c	c	c	d	c	c	d	c	c	c	c
<b>Total number of stars</b>		<b>5</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>6</b>	<b>4</b>	<b>5</b>
<b>Quality rating according to guideline**</b>		<b>fair</b>	<b>poor</b>	<b>fair</b>	<b>poor</b>	<b>fair</b>	<b>poor</b>	<b>poor</b>	<b>fair</b>	<b>poor</b>	<b>poor</b>	<b>fair</b>	<b>fair</b>	<b>poor</b>	<b>fair</b>	<b>poor</b>	<b>fair</b>	<b>poor</b>	<b>fair</b>

\*=one star (marked in yellow when each respective study were given a star)

\*\*Thresholds for converting the NOS rating to Agency for Healthcare Research and Quality - AHRQ - standards (good, fair, and poor):

**Good quality:** 3 or 4 stars in Selection domain AND 1 or 2 stars in Comparability domain AND 2 or 3 stars in Outcome domain

**Fair quality:** 2 stars in Selection domain AND 1 or 2 stars in Comparability domain AND 2 or 3 stars in Outcome domain

**Poor quality:** 0 or 1 star in Selection domain OR 0 stars in Comparability domain OR 0 or 1 stars in Outcome domain

Note: A study can be awarded a maximum of one star for each numbered item within the Selection and Outcome categories. A maximum of two stars can be given for Comparability