S1: Search terms per database, based on participants, exposure and outcomes.

Database	What	Participants	Exposure	Outcome
PubMED	MeSH terms	- pregnancy - pregnant women - maternal exposure	- stress, psychological - adaptation, psychological - emotions - depression - social adjustment - quality of life - life style - mental health - anxiety - mental disorders - social behavior - socioeconomic factors - social support	- respiratory sounds - asthma - bronchial hyperreactivity
EMBASE	Subject Headings	- pregnancy - pregnant woman	- mental stress - quality of life - adaptive behavior - coping behavior - social support - adaptation - depression - emotion - social adaptation - quality of life - lifestyle - family violence - domestic violence - violence - partner violence - mental health - psychological well being - anxiety - mental disease - social behavior - socioeconomics - social support	- wheezing - abnormal respiratory sound - asthma - allergic asthma - exercise induced asthma - extrinsic asthma - intrinsic asthma - bronchus hyperreactivity
PsycINFO	Subject Headings	- prenatal care - pregnancy - prenatal development - prenatal exposure	- psychological stress - stress - chronic stress - emotional adjustment - emotional control - coping behavior - emotions - mental disorders - mental health - psychopathology - depression (emotion) - social adjustment - quality of life - lifestyle - domestic violence - anxiety - emotional states - social behavior - antisocial behavior - socioeconomic status - social support - social networks	- asthma
Free text terms, all databases (PubMED, EMBASE, PsycINFO, Web of Science)	Title, abstract	- pregnan* - prenatal* - maternal exposure - gestation	life stress, mental suffering, environmental stress, coping*, socia*, socio*, psychol*, psychos*, psycho-s*, psychi*, emotion*, distress*, depress*, mental*, adjustment*, Anxieties, anxiety*, anxious*, affect*, fear*, behavior*, behaviour*, Lifestyle*, quality of life, abuse*, domestic violence*, life style*, life events, housing issues, socioeconomic status*, trauma*, adapt*	- respiratory sound* - wheez* - asthma* - bronchial hyperreactivit* - airway hyperresponsiveness - bronchial hyperresponsiveness

S2

NEWCASTLE - OTTAWA QUALITY ASSESSMENT SCALE – adapted version

COHORT STUDIES
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.

Selection (Max. 4 stars)
1a) Representativeness of the exposed cohort: Is the sample population, pregnant women, representative for the general population of pregnant women?
      a) truly representative sample of general population of pregnant women *(general population, no pre-selection on front, clear description in-/exclusion criteria,)
      b) selected group
      c) no description

1b) Representativeness of included population: Are the finally included pregnant women (response rate) representative for the selected sample of pregnant women?
      a) response rate (intention to analyze/ initial invited) at least 60%
      b) response rate < 60%
      c) no description

2) Ascertainment of exposure (assessment of psychological stress, e.g. anxiety/ depression).
      a) secure record, validated questionnaires* (for answering the research question)
      b) structured interview by an expert * (Interview by an expert, e.g. psychologist)
      c) Self report (stress as described by own observations)
      d) no description

3) Measurement:
      a) Prospective* (questions about psychological stress during pregnancy, measured during pregnancy (max. questions about past 6 months))
      b) Retrospective- (questions about psychological stress during pregnancy, measured after pregnancy)
      c) no description

Comparability (Max. 2 stars)
1) Comparability of cohorts on the basis of the design or analysis (authors checked if confounders are 'true confounders')). Maximum of 2 stars:
      a) study controls for prenatal maternal smoking *
      b) study controls for at least two of the following additional factors: medication/ drug/ alcohol use during pregnancy/ family history of asthma (including maternal and paternal asthma) or illnesses/ environmental tobacco smoke/ birth weight/ cesarean section/ pregnancy duration/ paracetamol use during pregnancy*
      c) not controlled for any confounders

Outcome (Max 2 stars)
1) Assessment of outcome (wheezing/ asthma)
      a) in case of asthma independent blind assessment (Doctors diagnosed asthma > 6 year) OR in case of wheezing (or respiratory problems): record linkage as reported by a health care professional (number of episodes, duration episode of: wheezing, coughing, fever)*
      b) assessment with validated questionnaires (e.g. ISAAC)*
      c) as reported by parents (observations, no validated questionnaires)

d) no description of diagnostics

2) Adequacy of follow up of cohorts (percentage of lost subjects after delivery)
　　　　a) complete follow up - all subjects accounted for *
　　　　b) subjects lost to follow up unlikely to introduce bias - small number lost - > 80%
　　　　(select an adequate %) follow up, or description provided of those lost) *
　　　　c) follow up rate < 80% (select an adequate %) and no description of those lost
　　　　d) no statement

NEWCASTLE - OTTAWA QUALITY ASSESSMENT SCALE - adapted version

CASE CONTROL STUDIES
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.

Selection (Max. 4 stars)
1) Is the case definition adequate? (description of asthma/ wheeze)
　　　　a) in case of asthma independent blind assessment (Doctors diagnosed asthma > 6 year) OR in case of wheezing (or respiratory problems): record linkage as reported by a health care professional (number of episodes, duration episode of: wheezing, coughing, fever)*
　　　　b) assessment with validated questionnaires (e.g. ISAAC)*
　　　　c) as reported by parents (observations, no validated questionnaires)
　　　　d) no description of diagnostics

2) Representativeness of the cases
　　　　a) consecutive or obviously representative series of cases* (all eligible cases, no preselection)
　　　　b) potential for selection biases or not stated

3) Selection of Controls
　　　　a) community controls * (same community as cases)
　　　　b) hospital controls
　　　　c) no description

4) Definition of Controls
　　　　a) no history of disease (endpoint) *
　　　　b) no description of source

Comparability (Max. 2 stars)
1) Comparability of cohorts on the basis of the design or analysis (authors checked if confounders are 'true confounders'). Maximum of 2 stars:
　　　　a) study controls for prenatal maternal smoking *
　　　　b) study controls for at least two of the following additional factors: medication/ drug/ alcohol use during pregnancy/ family history of asthma (including maternal and paternal asthma) or illnesses/ environmental tobacco smoke/ birth weight/ cesarean section/ pregnancy duration/ paracetamol use during pregnancy*
　　　　c) not controlled for any confounders

Exposure (Max. 3 stars)
1) Ascertainment of exposure (assessment of psychological stress, e.g. anxiety/ depression).

a) secure record, validated questionnaires* (for answering the research question)
b) structured interview by an expert * (Interview by an expert, e.g. psychologist)
c) Self report (stress as described by own observations)
d) no description

2) Measurement
a) Prospective* (questions about psychological stress during pregnancy, measured during pregnancy (max. questions about past 3 months)
b) Retrospective- (questions about psychological stress during pregnancy, measured after pregnancy)

3) Non-Response rate
a) same rate for both groups *
b) non respondents described
c) rate different and no designation

S3: Quality assessment of the studies included in the meta-analysis.

Cohort studies	Selection (4*)				Comparability (2*)	Outcome (2*)		Overall quality rating (8)	Quality
	1a. Representativeness of the cohort	1b. Representativeness of included population	2. Ascertainment of exposure	3. Measurement	1. confounders	1. Assessment of outcome	2. Adequacy of follow up of cohorts		
Alton et al. (2013)	a)*	a)-	a)*	a)*	a) * b) *	a)*	c)-	6	Moderate
Beijers et al. (2010)	b)-	c)-	a)*	a)*	a) * b) *	c)-	b)*	5	Moderate
Chiu et al. (2012)	a)*	a)*	a)*	a)*	a) * b) *	b)*	c)-	7	High
Cookson et al. (2009)	a)*	b)-	a)*	a)*	a) * b) *	a)*	b)*	7	High
De Marco et al. (2012)[a]	a)*	a)*	c)-	b)-	a)- b)*	b)*	b)*	5	Moderate
Guxens et al. (2014)	a)*	a)*	a)*	a)*	a) * b) *	a)*	c)-	7	High
Khashan, et al. (2012)	a)*	a)*	a)*	a)*	a) * b) *	d)-	c)-	6	Moderate
Reyes et al. (2011)	b)-	c)-	a)*	a)*	a) * b) *	c)-	b)*	5	Moderate
Wood et al. (2011)	b)-	a)*	a)*	a)*	a)- b)-	a)*	b)*	5	Moderate

[a]This study is a survey study. However, quality assessment was scored in the format of cohort studies since this best fitted the study design.

Case-control studies	Selection (4*)				Comparability (2*)	Outcome (3*)			Overall quality rating (9)	Quality
	1. Case definition adequate	2. Representativeness cases	3. Selection controls	4. Definition controls	1. Confounders	1. Ascertainment of outcome	2. Measurement	3. Non-resonse rate		
Lefevre et al. (2011)	a) *	a) *	a) *	b)-	a) * b)-	c)-	b)-	a) *	5	Moderate