Table 5: Clinical evidence tables

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>Full citation

Auger, Nathalie, Fraser, William D., Schnitzer, Mireille, Leduc, Line, Healy-Profitos, Jessica, Paradis, Gilles, Recurrent pre-eclampsia and subsequent cardiovascular risk, Heart (British Cardiac Society), 103, 235-243, 2017

Ref Id

775637

Country/ies where the study was carried out

Canada

Study type</td>
<td>Inclusion criteria
Women with pregnancies extending over 20 weeks' gestation, who gave birth to a live or stillborn infant between the 1989 and 2013 in hospitals in Québec (Canada)

Exclusion criteria
Not reported

Sample size
N=1 108 581

Maternal characteristics
<table>
<tr><th></th><th>Parity = 1</th><th>Parity ≥2</th></tr>
</table>
</td>
<td>Factors included in adjustment
Baseline age, pre-existing diabetes, pre-existing cardiovascular disease, socioeconomic deprivation and time period

Follow-up
Median 15.5 years</td>
<td>Results
Cumulative incidence in women with parity≥ 2 25 years post-delivery per 1000 (95% CI)
<table>
<tr><th>Outcome</th><th>Recurrent; parity≥ 2

(N=6066)</th><th>Non-recurrent; parity≥ 2

(N=33493)</th><th>No pre-eclampsia; parity≥ 2

(N=567 261)</th></tr>
<tr><td>MACE</td><td>281.4 (224.1 to 341.3)</td><td>167.7 (158.2 to 177.4)</td><td>72.6 (70.9 to 74.2)</td></tr>
<tr><td>Stroke</td><td>20.7 (13.7 to 30)</td><td>10.5 (8.4 to 13)</td><td>5.9 (5.5 to 6.3)</td></tr>
<tr><td>Hypertension</td><td>258.7 (200.7 to 320.3)</td><td>135.2 (126.1 to 144.5)</td><td>40.2 (38.7 to 41.6)</td></tr>
</table>
HR (95% CI) for women with recurrent and non-recurrent PE <u>in women with parity≥ 2</u>,</td>
<td>Details
Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: low risk
Study attrition: low risk
Prognostic factor measurement: low risk
Outcome measurement: low risk
Study confounding: low risk
Statistical analysis and reporting: low risk
Overall risk of bias: low risk</td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>Retrospective cohort study

Study dates
1989-2013

Source of funding
Canadian Institutes of Health Research</td>
<td>
<table>
<tr><td>Age at first delivery <20, n (%)</td><td>18938 (3.8)</td><td>45854 (7.6)</td></tr>
<tr><td>Age at first delivery 20-24, n (%)</td><td>77818 (15.5)</td><td>166632 (27.5)</td></tr>
<tr><td>Age at first delivery 25-29, n (%)</td><td>162151 (32.3)</td><td>250340 (41.3)</td></tr>
<tr><td>Age at first delivery 30-34, n (%)</td><td>155039 (30.9)</td><td>119426 (19.7)</td></tr>
<tr><td>Age at first delivery 35-39, n (%)</td><td>72070 (14.4)</td><td>23235 (3.8)</td></tr>
<tr><td>Age at first delivery ≥40, n (%)</td><td>15745 (3.1)</td><td>1333 (0.2)</td></tr>
<tr><td>Recurrent PE, n (%)</td><td>-</td><td>6066 (1)</td></tr>
<tr><td>Non-recurrent PE, n (%)</td><td>-</td><td>33493 (5.5)</td></tr>
</table>
</td>
<td></td>
<td>
relative to women with no history of pre-eclampsia (parity ≥2)
<table>
<tr><th>Outcome</th><th>Recurrent; parity≥ 2 (N=6066)</th><th>Non-recurrent; parity≥ 2 (N=33493)</th></tr>
<tr><td>MACE</td><td>3.9 (3.6 to 4.2)</td><td>2.3 (2.2 to 2.4)</td></tr>
<tr><td>Stroke</td><td>3 (2.3 to 4.1)</td><td>1.6 (1.4 to 1.9)</td></tr>
<tr><td>Hypertension</td><td>7.2 (6.6 to 7.8)</td><td>3.7 (3.5 to 3.9)</td></tr>
</table>
HR (95% CI) for women with parity=1 and pre-eclampsia or parity = 1 and no pre-eclampsia, relative to women with parity≥ 2 and no pre-eclampsia
<table>
<tr><th>Outcome</th><th>Pre-eclampsia; parity=1 (N=24799)</th><th>No pre-eclampsia; parity = 1 (N= 476 962)</th></tr>
<tr><td>MACE</td><td>3.1 (3 to 3.3)</td><td>1.3 (1.2 to 1.3)</td></tr>
</table>
</td>
<td></td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td></td>
<td>
<table>
<tr><td>Isolated PE, n (%)</td><td>24799 (4.9)</td><td>-</td></tr>
<tr><td>No PE, n (%)</td><td>476962 (95.1)</td><td>567261 (93.5)</td></tr>
</table>
ICD-10 diagnosis of mild, severe, or superimposed PE
</td>
<td></td>
<td>
<table>
<tr><td>Stroke</td><td>3.1 (2.7 to 3.7)</td><td>1.4 (1.3 to 1.5)</td></tr>
<tr><td>Hypertension</td><td>4.8 (4.5 to 5)</td><td>1.4 (1.3 to 1.4)</td></tr>
</table>
</td>
<td></td>
</tr>
<tr>
<td>Full citation

Bellamy, L., Casas, J. P., Hingorani, A. D., Williams, D. J., Pre-eclampsia and risk of cardiovascular disease and cancer in later life: Systematic review and meta-analysis, British Medical Journal, 335, 974-977, 2007

Ref Id

842383

Country/ies where the study was carried out</td>
<td>Inclusion criteria
Prospective and retrospective cohort studies including women of any parity or age and any severity of pre-eclampsia within 3 months of delivery

Exclusion criteria
Case-control studies, studies with historical controls

Sample size
K=13 studies relevant for this systematic review.
N= 21030 women with PE included for the outcome hypertension

Maternal characteristics</td>
<td>Factors included in adjustment
Factors adjusted for by name of study for hypertension outcome
<table>
<tr><th>Study</th><th>Factors</th></tr>
<tr><td>Adams 1961</td><td>-</td></tr>
<tr><td>Epstein 1964</td><td>-</td></tr>
<tr><td>Sibai 1986</td><td>-</td></tr>
<tr><td>Carleton 1988</td><td>BMI</td></tr>
</table>
</td>
<td>Results
RR (95% CI) (random) of future events in women who had PE
Hypertension, RR=3.70 (2.70 to 5.05)
*The outcomes ischemic heart disease and stroke were not included as all studies were already included in MacDonald 2008</td>
<td>Details
ROB assessed using AMSTAR checklist
Total score: 11/16
The following items were not met by the study authors:

unclear whether data extraction was performed in duplication

• no list of excluded studies was provided
• no risk of bias assessment was provided
• sources of funding of the included</td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>UK

Study type
Systematic review and meta-analysis of prospective and retrospective cohort studies

Study dates
Any study up to December 2006 was included

Source of funding
Part of the funding was received by UCLH/UCL from the Department of Health´s NIHR Biomedical Research Centre</td>
<td>Studies included for the hypertension outcome
<table>
<tr><th>Study</th><th>Country</th><th>No with PE/ No of women</th></tr>
<tr><td>Adams 1961</td><td>UK</td><td>54/334</td></tr>
<tr><td>Epstein 1964</td><td>USA</td><td>48/162</td></tr>
<tr><td>Sibai 1986</td><td>USA</td><td>406/815</td></tr>
<tr><td>Carleton 1988</td><td>USA</td><td>23/46</td></tr>
<tr><td>Nisell 1995</td><td>Sweden</td><td>45/89</td></tr>
<tr><td>North 1996</td><td>NZ</td><td>50/100</td></tr>
<tr><td>Laivuori 1996</td><td>Finland</td><td>22/44</td></tr>
<tr><td>Hannaford 1996</td><td>UK</td><td>2371/17202</td></tr>
<tr><td>Marin 2000</td><td>Spain</td><td>80/166</td></tr>
<tr><td>Shammas 2000</td><td>Jordan</td><td>47/93</td></tr>
<tr><td>Hubel 2000</td><td>Iceland</td><td>30/60</td></tr>
<tr><td>Sattar 2003</td><td>Scotland</td><td>40/80</td></tr>
</table></td>
<td>
<table>
<tr><td>Nisell 1995</td><td>-</td></tr>
<tr><td>North 1996</td><td>-</td></tr>
<tr><td>Laivuori 1996</td><td>-</td></tr>
<tr><td>Hannaford 1996</td><td>Smoking, SES</td></tr>
<tr><td>Marin 2000</td><td>BMI,SES,hypercholesterolemia, type 2 diabetes mellitus</td></tr>
<tr><td>Shammas 2000</td><td>-</td></tr>
<tr><td>Hubel 2000</td><td>-</td></tr>
<tr><td>Sattar 2003</td><td>BMI, smoking, SES</td></tr>
<tr><td>Wilson 2003</td><td>SES</td></tr>
</table>
</td>
<td></td>
<td>studies were not reported
• risk of bias was not taken into account when discussing the study results</td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr><td></td><td><table><tr><td>Wilson 2003</td><td>Scotland</td><td>443/1839</td></tr></table>

Follow-up
Mean follow-up 14.1 y</td><td></td><td></td></tr>
<tr><td>Full citation

Benschop, Laura, Duvekot, Johannes J., Versmissen, Jorie, van Broekhoven, Valeska, Steegers, Eric A. P., Roeters van Lennep, Jeanine E., Blood Pressure Profile 1 Year After Severe Preeclampsia, Hypertension (Dallas, Tex. : 1979), 71, 491-498, 2018

Ref Id

842387

Country/ies where the study was carried out

The Netherlands</td><td>Inclusion criteria
Women referred to the follow-up pre-eclampsia outpatient clinic in Erasmus Medical Center and presented with severe pre-eclampsia

Exclusion criteria
Women with acute fatty liver disease, mild PE during the index pregnancy, pregnant during follow-up or pregnant between follow-up and index pregnancy

Sample size
N=200

Maternal characteristics<table><tr><td></td><td>Total N= 200</td></tr><tr><td>Age, years, mean (SD)</td><td>31.6 (4.8)</td></tr></table></td><td>Factors included in adjustment
Not applicable

Follow-up
1 year</td><td>Results
N (%) for hypertension* measured in different settings
Daytime hypertension with ambulatory blood pressure monitoring (135/85 mmHg): 64 (32)
Night-time hypertension with ambulatory blood pressure monitoring (120/70 mmHg): 85 (42.5)
Hypertension with office BP monitoring (140/90 mmHg): 48 (24)
*Hypertension includes sustained hypertension, masked hypertension or white coat hypertension</td><td>Details
Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: low risk
Study attrition: low risk
Prognostic factor measurement: mode rate risk (some factors, such as pre-existing hypertension) were obtained through questionnaires and cross-check with medical records, but it is unclear whether there is any information part of the prognostic factor measurement that was only obtained through questionnaires and</td></tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>Study type
Retrospective cohort study

Study dates
April 2011-September 2017

Source of funding
Not reported</td>
<td>
<table>
<tr><td>Pre-exiting hypertension, n (%)</td><td>29 (14.6)</td></tr>
<tr><td>GA at diagnosis of PE</td><td>30.5 (5)</td></tr>
<tr><td>GA at delivery, weeks, mean (SD)</td><td>31.7 (3.7)</td></tr>
</table>
ACOG 2002 definition of severe pre-eclampsia.
</td>
<td></td>
<td></td>
<td>therefore subject to reporting/recall bias
Outcome measurement: low risk
Study confounding: low risk
Statistical analysis and reporting: low risk
Overall risk of bias: moderate risk</td>
</tr>
<tr>
<td>Full citation

Black, Mary Helen, Zhou, Hui, Sacks, David A., Dublin, Sascha, Lawrence, Jean M., Harrison, Teresa N., Reynolds, Kristi, Hypertensive disorders first identified in pregnancy increase risk for incident prehypertension and hypertension in the year after delivery, Journal of</td>
<td>Inclusion criteria
Normotensive parous women who gave birth to a singleton neonate at least 20 weeks GA and experienced a hypertensive disorder of pregnancy

Exclusion criteria
Women with chronic hypertension, pre-hypertension or gestational hypertension, women with a single blood pressure measurement in the pre or early pregnancy period for which result was abnormal</td>
<td>Factors included in adjustment
Ethnicity, maternal age, parity, smoking, pre-pregnancy weight, gestational age, gestational diabetes

Follow-up
1 year</td>
<td>Results
Association (RR, 95% CI) between hypertensive disorders of pregnancy and pre-eclampsia/eclampsia with prehypertension or hypertension in the year after delivery*
<table>
<tr><td>1st pregnancy</td><td colspan="2">2nd pregnancy</td></tr>
<tr><td></td><td>Prevalence</td><td>RR (95% CI</td></tr>
<tr><td>Any HDP</td><td></td><td></td></tr>
<tr><td>No</td><td>450/4813 (9.34%)</td><td>Reference</td></tr>
<tr><td>Yes</td><td>81/292 (27.73%)</td><td>2.23 (1.62-3</td></tr>
</table>
</td>
<td>Details
Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: low risk (although note that the majority [76.67%] of women included in the study were of Hispanic ethnicity, which may raise concerns regarding generalisability of the results)</td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>Hypertension, 34, 728-35, 2016

Ref Id

775701

Country/ies where the study was carried out

USA

Study type
Retrospective cohort study

Study dates
30 October 2005-31 December 2010

Source of funding
Kaiser Permanente Southern California Direct Community Benefit Fund</td>
<td>Sample size
N= 5960

Maternal characteristics
<table>
<tr><th></th><th>Women with HDP during pregnancy (N=358)</th><th>Women without HDP during pregnancy (N=5602)</th></tr>
<tr><td>Age, years, mean (SD)</td><td>27.7 (6.1)</td><td>28.9 (6)</td></tr>
<tr><td>Pre/early-pregnancy sBP, mmHg, mean (SD)</td><td>112.3 (9.4)</td><td>108.4 (9.3)</td></tr>
<tr><td>Pre/early-pregnancy dBP, mmHg, mean (SD)</td><td>69.6 (7)</td><td>66.7 (7)</td></tr>
</table>
ICD 9 criteria</td>
<td></td>
<td>
<table>
<tr><td>PE/E</td><td></td><td></td></tr>
<tr><td>No</td><td>1/4928 (9.82%)</td><td>Reference</td></tr>
<tr><td>Yes</td><td>47/177 (26.55%)</td><td>2.23 (1.62-3</td></tr>
</table>
*These data does not take into account blood pressure measurements obtained 12 weeks post-partum (n=855 women were excluded from this analysis).
</td>
<td>Study attrition: low risk
Prognostic factor measurement: low risk
Outcome measurement: low risk
Study confounding: low risk
Statistical analysis and reporting: low risk
Overall risk of bias: low risk (high quality study)</td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>
Full citation

Boghossian, Nansi S., Albert, Paul S., Mendola, Pauline, Grantz, Katherine L., Yeung, Edwina, Delivery Blood Pressure and Other First Pregnancy Risk Factors in Relation to Hypertensive Disorders in Second Pregnancies, American Journal of Hypertension, 28, 1172-9, 2015

Ref Id

842418

Country/ies where the study was carried out

United States

Study type
Retrospective cohort study

Study dates
</td>
<td>
Inclusion criteria
Nulliparous women with singleton deliveries in their first 2 pregnancies who delivered at least twice and up to 6 times.

Exclusion criteria
Unclear hypertensive disorder during pregnancy; hypertensive disorder not specified; women with a history of chronic hypertension prior to the first pregnancy

Sample size
N= 26787

Maternal characteristics
Maternal characteristics of the 2nd pregnancy by the HDP of the 1st pregnancy
<table>
<tr><th></th><th>Normotensive</th><th>Gestational hypertension</th><th>Pre-eclampsia</th><th>Chronic hypertension</th></tr>
</table>
</td>
<td>
Factors included in adjustment
Not applicable

Follow-up
Subsequent pregnancy. Follow-up length was not reported
</td>
<td>
Results
Recurrence rate in subsequent pregnancy by hypertensive disorder in 1st pregnancy
<table>
<tr><th></th><th colspan="5">2nd pregnancy</th></tr>
<tr><th>1st pregnancy</th><th>Normotensive (N=25475)</th><th>Gestational hypertension (N=642)</th><th>Pre-eclampsia (N=493)</th><th>Chronic hypertension and superimposed pre-</th><th>Incidence/recurrence*</th></tr>
<tr><td>Normotensive (n=23913)</td><td>23301 (97.4)</td><td>284 (1.2)</td><td>253 (1.1)</td><td>57 (0.24)</td><td>612 (2.6)</td></tr>
<tr><td>Gestational hypertension (n=1538)</td><td>1195 (77.7)</td><td>200 (13)</td><td>86 (5.6)</td><td>44 (2.9)</td><td>343 (22.3)</td></tr>
</table>
</td>
<td>
Details
Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: moderate risk of bias (study sample represents the population of interest, however the population is not adequately described during their first pregnancy)
Study attrition: low risk of bias (no loss to follow-up has been described)
Prognostic factor measurement: low risk of bias (prognostic factor is adequately measured and described)
Outcome measurement: mode
</td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>2002-2010

Source of funding
National Institute of Child Health and Human Development</td>
<td>
<table>
<tr><td>Age, years, mean (SD)</td><td>26.1 (4.1)</td><td>26.5 (4.3)</td><td>27.7 (4.6)</td><td>26.5 (4.3)</td></tr>
<tr><td>Preterm <34 weeks in 1st pregnancy</td><td>14 (4.9)</td><td>15 (5.9)</td><td>4 (5.5)</td><td>366 (1.6)</td></tr>
<tr><td>Spontaneous preterm</td><td>299 (81.7)</td><td>14 (93.3)</td><td>4 (100)</td><td>10 (71.4)</td></tr>
<tr><td>Indicated preterm</td><td>40 (10.9)</td><td>3 (21.4)</td><td>1 (6.7)</td><td>0</td></tr>
</table>
</td>
<td></td>
<td>
<table>
<tr><td>Pre-eclampsia (n=1319)</td><td>968 (73.4)</td><td>156 (11.8)</td><td>150 (11.4)</td><td>25 (1.9)</td><td>351 (26.6)</td></tr>
<tr><td>Chronic hypertension (n=114)</td><td>-</td><td>-</td><td>-</td><td>176 (100)</td><td>-</td></tr>
</table>
*Incidence/recurrence includes women who developed gestational hypertension, pre-eclampsia, eclampsia, chronic hypertension, and superimposed pre-eclampsia in the 2nd pregnancy
</td>
<td>rate risk of bias (the outcome of interest is adequately measured, although the follow-up length has not been reported)
Study confounding: low risk of bias (not applicable)
Statistical analysis and reporting: low risk of bias (statistical analyses are appropriate for the design of the study)
Overall risk of bias: Moderate risk of bias (moderate quality evidence)</td>
</tr>
<tr>
<td>Full citation

Bokslag, Anouk, Teunissen, Pim W., Franssen, Constantijn, van Kesteren, Floortje, Kamp, Otto, Ganzevoort, Wessel,</td>
<td>Inclusion criteria
Exposure group: women with early-onset pre-eclampsia (delivery before 34 weeks' gestation)
Control group: women with uncomplicated pregnancies</td>
<td>Factors included in adjustment
NA

Follow-up
Not reported</td>
<td>Results
<table>
<tr><th></th><th>Exposure group (early-onset PE) (N=131)</th><th>Control group (N=56)</th></tr>
<tr><td>Hypertension[a]</td><td>50 (38.2)</td><td>8 (14.3)</td></tr>
</table>
</td>
<td>Details
Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: low risk</td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>Paulus, Walter J., de Groot, Christianne J. M., Effect of early-onset preeclampsia on cardiovascular risk in the fifth decade of life, American Journal of Obstetrics and Gynecology, 216, 523.e1-523.e7, 2017

Ref Id

842420

Country/ies where the study was carried out

The Netherlands

Study type
Prospective observational study

Study dates
1998-2005

Source of funding
Dutch Heart Association</td>
<td>Exclusion criteria
Chronic hypertension or first sBP/dBP measurement in the first trimester of pregnancy ≥140/90 mmHg; multiple pregnancy; women pregnant or breastfeeding at assessment; fetus with congenital abnormalities; diabetes mellitus; gestational diabetes; cardiovascular disease, including renal diseases; and use of cardiovascular-related medication before the index pregnancy

Sample size
N=246 women with early-onset pre-eclampsia and n=231 women with uncomplicated pregnancies

Maternal characteristics
<table>
<tr><th></th><th>Early-onset PE (N=131)</th><th>Uncomplicated pregnancy (N=56)</th></tr>
<tr><td>Age, years, mean (SD)</td><td>30.9 (5)</td><td>32.3 (4.1)</td></tr>
</table>
</td>
<td></td>
<td>a Current use of antihypertensive medication and/or sBP/dBP ≥140/90 mmHg</td>
<td>Study attrition: low risk
Prognostic factor measurement: low risk
Outcome measurement: mode rate risk (women were selected as having hypertension if they were taking antihypertensive medication, but blood pressure measurements were not taken)
Study confounding: moderate risk (confounding factors were assessed with a questionnaire)
Statistical analysis and reporting: low risk
Overall risk of bias: moderate risk (moderate quality)</td>
</tr>
</table>

Study details	Participants	Methods	Results	Limitations
	sBP at booking, mmHg, mean (SD) 117 (10.2) 109 (9.9) **dBP at booking, mmHg, mean (SD)** 72 (7.9) 65 (7) **GA at delivery, weeks, mean (SD)** 30.5 (2.1) 40 (1.4) *ISSHP 2001 criteria*			
Full citation Bramham, Kate, Briley, Annette L., Seed, Paul, Poston, Lucilla, Shennan, Andrew H., Chappell, Lucy C., Adverse maternal and perinatal outcomes in women with previous preeclampsia: a prospective study, American Journal of	**Inclusion criteria** Women who had pre-eclampsia at <37 weeks' gestation in the most recent pregnancy **Exclusion criteria** Women with multiple pregnancies **Sample size** N=500	**Factors included in adjustment** NA **Follow-up** Any subsequent pregnancy. Follow-up length was not reported	**Results** **Previous delivery for PE** **Any subsequent pregnancy outcome** / **<34 wk (N=304)** / **34-37 wk (N=196)** Recurrent PE, mean (SD) 106 (34.8%) 47 (23.9%)	**Details** Based on the NICE manual 2014 checklist for prognostic studies and QUIPS **Study participation**: high risk of bias (no demographic characteristics were provided for women who developed severe pre-eclampsia or

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>Obstetrics and Gynecology, 204, 512.e1-9, 2011

Ref Id

775716

Country/ies where the study was carried out

UK

Study type
Prospective cohort study

Study dates
August 2003-June 2005

Source of funding
Wellcome Trust with additional support from Tommy's the baby charity</td>
<td>Maternal characteristics
<table>
<tr><th></th><th>Women without PE in subsequent pregnancy (N=383)</th><th>Women with PE in subsequent pregnancy * (N=117)</th></tr>
<tr><td>Age, years, mean (SD)</td><td>31.1 (5.5)</td><td>31.9 (5.4)</td></tr>
<tr><td>Baseline sBP <130 mmHg, mean (SD)</td><td>265 (69)</td><td>58 (50)</td></tr>
<tr><td>Baseline sBP 130-139 mmHg, mean (SD)</td><td>64 (17)</td><td>31 (26)</td></tr>
<tr><td>Baseline sBP ≥140 mmHg, mean (SD)</td><td>54 (14)</td><td>28 (24)</td></tr>
<tr><td>Baseline dBP <80 mmHg, mean (SD)</td><td>253 (66)</td><td>55 (47)</td></tr>
</table></td>
<td></td>
<td>
<table>
<tr><td>Recurrent gestational hypertension, mean (SD)</td><td>162 (53.2%)</td><td>85 (43.3%)</td></tr>
</table></td>
<td>gestational hypertension in the subsequent pregnancy)
Study attrition: low risk of bias (no loss to follow-up has been reported)
Prognostic factor measurement: low risk
Outcome measurement: low risk (outcome was adequately measured, but note that follow-up length has not been reported)
Study confounding: low risk (not applicable)
Statistical analysis and reporting: low risk
Overall risk of bias: moderate risk of bias (moderate quality evidence)</td>
</tr>
</table>

Study details	Participants	Methods	Results	Limitations
	<table><tr><td>**Baseline dBP 80-89 mmHg, mean (SD)**</td><td>100 (26)</td><td>46 (39)</td></tr><tr><td>**Baseline dBP ≥ 90 mmHg, mean (SD)**</td><td>30 (8)</td><td>16 (14)</td></tr><tr><td>**GA at randomisation, weeks, mean (SD)**</td><td>18.2 (15.7-20.6)</td><td>18.1 (15.6-20.4)</td></tr><tr><td>**Previous eclampsia**</td><td>28 (7)</td><td>5 (4)</td></tr><tr><td>**Chronic hypertension**</td><td>112 (29)</td><td>49 (42)</td></tr></table> *Only the details of women who experienced pre-eclampsia in the subsequent pregnancy have been reported. No details were provided for those who developed severe pre-eclampsia and gestational hypertension			
Full citation Callaway, L. K., Mamun, A.,	**Inclusion criteria** Information regarding the presence/absence of hypertensive disorders of pregnancy at index	**Factors included in adjustment** Age, education, ethnicity, alcohol use, exercise, smoking status, BMI.	**Results** Of those who had hypertension during pregnancy, 63 out of 191 (33%) presented with hypertension post delivery	**Details** Based on the NICE manual 2014 checklist

Study details	Participants	Methods	Results	Limitations
McIntyre, H. D., Williams, G. M., Najman, J. M., Nitert, M. D., Lawlor, D. A., Does a history of hypertensive disorders of pregnancy help predict future essential hypertension? Findings from a prospective pregnancy cohort study, Journal of Human Hypertension, 27, 309-14, 2013 **Ref Id** 812761 **Country/ies where the study was carried out** Australia **Study type** Prospective cohort study **Study dates**	pregnancy and information regarding BP measurements 21 years after the delivery **Exclusion criteria** Not reported **Sample size** N= 2117 women **Maternal characteristics** No data regarding age, type of HDP or gestational age at birth was reported	**Follow-up** 21 years	Adjusted OR of hypertension at 21 years post delivery= 2.46 (1.70-3.56) Hypertension was defined as *dBP ≥90 mmHg at least twice beyond 20 weeks gestational age, associated with proteinuria (2 of protein on dipstick testing) and or excessive fluid retention (defined as excessive weight gain or generalised oedema)*	for prognostic studies and QUIPS **Study participation**: low risk **Study attrition:** low risk **Prognostic factor measurement:** low risk **Outcome measurement:** low risk **Study confounding:** low risk **Statistical analysis and reporting:** low risk **Overall risk of bias: low risk**

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr><td>1981-1983

Source of funding
Not reported</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Full citation

Canoy, D., Cairns, B. J., Balkwill, A., Wright, F. L., Khalil, A., Beral, V., Green, J., Reeves, G., Hypertension in pregnancy and risk of coronary heart disease and stroke: A prospective study in a large UK cohort, International Journal of Cardiology, 222, 1012-1018, 2016

Ref Id

842452

Country/ies where the study was carried out

UK</td><td>Inclusion criteria
Parous women aged 50 to 64 at the time of recruitment

Exclusion criteria
Women with a hospital record of stroke, heart disease or cancer (except non melanoma skin cancer), nulliparous women or women with missing data on parity

Sample size
N=1 105 568

Maternal characteristics
Maternal characteristics at recruitment</td><td>Factors included in adjustment
SES, parity, current smoking status, BMI, engage in strenuous exercise, alcohol drinker, previous use of hormone treatment, diabetes treatment at baseline, hypercholesterolemia at baseline

Follow-up
11.6 years (SD=2.3)</td><td>Results
<table><tr><th></th><th>Exposure group (N=290 008)</th><th>Control group (N=815 560)</th><th>RR (95% CI)</th></tr><tr><td>MACE (ICD-10 codes 120 to 125)</td><td>21581</td><td>46580</td><td>1.29 (1.27 to 1.31)</td></tr><tr><td>Cerebrovascular disease (ICD-10 codes 160 to 169)</td><td>6771</td><td>16226</td><td>1.23 (1.20 to 1.27)</td></tr><tr><td>Death due to coronary heart disease (ICD-10 codes 120 to 125)</td><td>2520</td><td>5216</td><td>1.35 (1.29 to 1.42)</td></tr></table></td><td>Details
Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: low risk
Study attrition: low risk
Prognostic factor measurement: high risk of bias (method for prognostic factor measurement is subject to recall bias as it was based on a questionnaire completed at recruitment)
Outcome measurement: low risk
Study confounding: high risk of bias (the measurement of</td></tr>
</table>

Study details	Participants	Methods	Results	Limitations
Study type Retrospective cohort study **Study dates** Not reported **Source of funding** Cancer Research UK, Medical Research Council, Oxford University BHF Centre of Research Excellence	<table><tr><td></td><td>**Women without hypertension in their index pregnancy**</td><td>**Women with hypertension in their index pregnancy**</td></tr><tr><td>**Age, years, mean (SD)**</td><td>56 (4.8)</td><td>55.9 (4.7)</td></tr><tr><td>**Being treated for hypertension, n (%)**</td><td>82145 (10.1)</td><td>79163 (27.3)</td></tr></table>		<table><tr><td>**Death due to cerebrovascular disease (ICD-10 codes 160 to 169)**</td><td>1522</td><td>4032</td><td>1.16 (1.09 to 1.23)</td></tr></table>	confounders is not reliable as it is based on a questionnaire completed at recruitment) **Statistical analysis and reporting:** low risk **Overall risk of bias:** high risk of bias (low quality evidence)
Full citation Drost, Jose T., Arpaci, Ganiye, Ottervanger, Jan Paul, de Boer, Menko Jan, van Eyck, Jim, van der Schouw, Yvonne T., Maas, Angela H. E. M., Cardiovascular	**Inclusion criteria** Women with early pre-eclampsia registered on the 'early pre-eclampsia database', and women with uneventful pregnancy from the 'general obstetric database' registered during the same period (1991-2007) **Exclusion criteria**	**Factors included in adjustment** Age, years postpartum and smoking status **Follow-up** 10 years	**Results** **Adjusted ORs for the presence of hypertension in women with pre-eclampsia during pregnancy** 3.59 (2.48-5.20)	**Details** Based on the NICE manual 2014 checklist for prognostic studies and QUIPS **Study participation**: low risk

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>risk factors in women 10 years post early preeclampsia: the Preeclampsia Risk EValuation in FEMales study (PREVFEM), European Journal of Preventive Cardiology, 19, 1138-44, 2012

Ref Id

842558

Country/ies where the study was carried out

The Netherlands

Study type
Retrospective cohort study

Study dates
Not reported

Source of funding
None</td>
<td>Breastfeeding or pregnant women

Sample size
N=339 women who had pre-eclampsia prior to 32 weeks and n=332 women with uncomplicated pregnancy (no hypertensive disorder)

Maternal characteristics
<table>
<tr><th></th><th>Women with PE at index pregnancy (N=339)</th><th>Women without PE at index pregnancy (N=332)</th></tr>
<tr><td>Age, years, mean (SD)</td><td>38.9 (4.9)</td><td>39.3 (4.4)</td></tr>
<tr><td>Hypertension, n (%)</td><td>146 (43.1)</td><td>57 (17.2)</td></tr>
<tr><td>Antihypertensive medication, n (%)</td><td>69 (20.6)</td><td>6 (2.1)</td></tr>
<tr><td>Family history of</td><td>255 (75.5)</td><td>212 (63.9)</td></tr>
</table>
</td>
<td></td>
<td></td>
<td>Study attrition: low risk
Prognostic factor measurement: low risk
Outcome measurement: low risk
Study confounding: low risk
Statistical analysis and reporting: low risk
Overall risk of bias: low risk (high quality study)</td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr><td></td><td>cardiovascular risk, n (%)
sBP/dBP ≥140 90 with proteinuria (≥0.3 g/ 24 h)</td><td></td><td></td><td></td></tr>
<tr><td>Full citation

Ebbing, Cathrine, Rasmussen, Svein, Skjaerven, Rolv, Irgens, Lorentz M., Risk factors for recurrence of hypertensive disorders of pregnancy, a population-based cohort study, Acta Obstetricia et Gynecologica Scandinavica, 96, 243-250, 2017

Ref Id

842568

Country/ies where the study was carried out

Norway</td><td>Inclusion criteria
Women with a first and second singleton birth registered within the study dates with known gestational age at delivery.

Exclusion criteria
Not reported

Sample size
N=724 980

Maternal characteristics</td><td>Factors included in adjustment
Not applicable

Follow-up
Subsequent pregnancy. Follow-up length was not reported</td><td>Results
<table><tr><th></th><th colspan="2">2nd pregnancy</th></tr><tr><th>1st pregnancy</th><th>GH</th><th>PE (any GA)</th></tr><tr><td>No HDP (N=699 270, 94.1%)</td><td>6190 (1.1%)</td><td>8973(1.2%)</td></tr><tr><td>GH (N=13287, 1.8%)</td><td>1439 (10.8%)</td><td>1046(7.8%)</td></tr><tr><td>PE GA 37w+ (N=25105, 3.4%)</td><td>1569 (6.2%)</td><td>3229(12.8%)</td></tr><tr><td>PE GA 33-36w (N=3877, 0.5%)</td><td>287 (7.4%)</td><td>891 (22.8%)</td></tr><tr><td>PE GA 25-32w (N=1441, 0.2%)</td><td>94 (6.5%)</td><td>474(32.98%)</td></tr></table></td><td>Details
Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: high risk (participant´s characteristics have not been adequately described)
Study attrition: low risk
Prognostic factor measurement: low risk
Outcome measurement: low risk
Study confounding: low risk
Statistical analysis and reporting: low risk
Overall risk of bias: moderate risk</td></tr>
</table>

Study details	Participants					Methods	Results	Limitations
Study type Retrospective cohort study **Study dates** 1967-2012 **Source of funding** Western Norway Health Authority	**Maternal age (n,%)**	**No HDP***	**HDP* in index and second pregnancy**	**HDP* only in the index pregnancy**	**HDP* only in the second pregnancy**			(moderate quality evidence)
	<20	7882 (1.2%)	33 (0.4%)	308 (0.9%)	80 (0.5%)			
	20-24	151795 (22.2%)	1360 (13.1%)	6881 (19.9%)	2453 (16.2%)			
	25-29	2774368 (40.1%)	3385 (36.8%)	13662 (39.6%)	5625 (37.1%)			
	30-34	187651 (27.4%9	2942 (50.7%)	10085 (29.2%)	4791 (31.6%)			
	35-39	55360 (8.1%)	1133 (17.5%)	3158 (9.1%)	1867 (12.3%)			
	40+	7205 (1%)	176 (3.1%)	433 (1.3%)	330 (2.2%)			

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr><td></td><td>*HDP included gestational hypertension and pre-eclampsia</td><td></td><td></td><td></td></tr>
<tr><td>Full citation

Ehrenthal, Deborah B., Rogers, Stephanie, Goldstein, Neal D., Edwards, David G., Weintraub, William S., Cardiovascular risk factors one year after a hypertensive disorder of pregnancy, Journal of women's health (2002), 24, 23-9, 2015

Ref Id

742778

Country/ies where the study was carried out

USA

Study type</td><td>Inclusion criteria
Non-pregnant parous women with and without pregnancies complicated by hypertensive disorders of pregnancy who had consented to study participation

Exclusion criteria
Women < 18 years old, non-English speakers, with chronic hypertension or gestational diabetes

Sample size
N= 71 women

Maternal characteristics<table><tr><th></th><th>Women with HDP during their index pregnancy (N=31)</th><th>Women without HDP during their index pregnancy (N=40)</th></tr></table></td><td>Factors included in adjustment
Not applicable

Follow-up
1 year</td><td>Results<table><tr><th></th><th>Exposure group (N=31)</th><th>Control group(N=40)</th></tr><tr><td>Hypertension or BP ≥140/90</td><td>5 (16.1)</td><td>1 (2.5), p=0.04</td></tr></table></td><td>Details
Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: low risk
Study attrition: low risk
Prognostic factor measurement: low risk
Outcome measurement: low risk
Study confounding: low risk
Statistical analysis and reporting: low risk
Overall risk of bias: low risk</td></tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>Prospective cohort study

Study dates
2011-2012

Source of funding
National Institute of General Medical Sciences, National Institutes of Health</td>
<td>
<table>
<tr><td>Age, years, mean (SD)</td><td>32 (6.6)</td><td>30.6 (5.2)</td></tr>
<tr><td>Nulliparous (pre-pregnancy), n (%)</td><td>14 (45.2)</td><td>15 (37.5)</td></tr>
<tr><td>Delivered preterm (pre-pregnancy), n (%)</td><td>6 (19.4)</td><td>2 (5)</td></tr>
<tr><td>BMI (pre-pregnancy)</td><td>30 (8.2)</td><td>30.2 (8)</td></tr>
</table>
Definition of HDP: New onset sBP/dBP ≥140 90 mmHg after 20 weeks gestation. Pre-eclampsia was defined as the presence of ≥300 mg of proteinuria in a 24 h urine collection or sBP/dBP ≥ 160 110 mmHg on twice occasions
</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full citation

Grandi, S. M., Vallee-Pouliot, K., Reynier, P., Eberg, M., Platt, R. W., Arel, R., Basso, O., Filion,</td>
<td>Inclusion criteria
Women with ≥2 years of observation time in the United Kingdom's Clinical Practice Research Datalink (CPRD)

Exclusion criteria</td>
<td>Factors included in adjustment
For the hypertension outcome, the following factors have been adjusted for: age, smoking status, BMI, alcohol abuse, year of cohort entry, region of residence, multiple pregnancy at first pregnancy, depression, dyslipidaemia,</td>
<td>Results
Risk (adjusted HR [95% CI]) of CVD and hypertension in women with hypertensive disorders during pregnancy
<table>
<tr><th></th><th>Events</th><th>Adjusted HR (95% CI)</th></tr>
</table>
</td>
<td>Details
Based on the NICE manual
2014 checklist for prognostic studies and QUIPS</td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>K. B., Hypertensive Disorders in Pregnancy and the Risk of Subsequent Cardiovascular Disease, Paediatric and Perinatal Epidemiology, 31, 412-421, 2017

Ref Id

842661

Country/ies where the study was carried out

Canada

Study type
Retrospective cohort study

Study dates
January 1990-December 2013

Source of funding
Funding was not reported, but the authors are</td>
<td>Women with a diagnosis of hypertension prior to 18 weeks of GA for the index pregnancy, history of CVD, ≥2 measures of BP≥140/90 mmHg before 18 weeks G, dBP≥110 mmHg before 18 weeks GA, <15 years or >45 years and used antihypertensive medication before 18 weeks of GA

Sample size
N= 146748

Maternal characteristics
<table>
<tr><th></th><th>Exposure group (N=5399)</th><th>Control group (N=141 349)</th></tr>
<tr><td>Age, years, mean (SD)</td><td>29.8 (6)</td><td>29.2 (6.1)</td></tr>
<tr><td>Family hx of CVD, n (%)</td><td>732 (13.6)</td><td>16 456 (11.6)</td></tr>
</table>
The exposure group consisted of women with a HDP in any pregnancy meeting any of the following criteria (measured</td>
<td>polycystic ovary syndrome, venous thromboembolism, gestational diabetes, diabetes mellitus, renal disease, migraines, family history of CVD and hypertension, number of different drug classes prescribed, use of statin, aspirin and anti-depressant medications in the year prior to pregnancy
For the CVD outcome, the above mentioned factors have been accounted for in addition to: non-steroidal anti-inflammatory drugs, oral contraceptives, anti-migraine medications in the year before pregnancy

Follow-up
Median 4.7 years (IQR 1.9 to 9.1)</td>
<td>
<table>
<tr><td>Cardiovascular disease</td><td></td><td></td></tr>
<tr><td>PE/E</td><td>-</td><td>0.6 (0.2-1.9)</td></tr>
<tr><td>Other gestational hypertension</td><td></td><td>2.3 (1.8-2.9)</td></tr>
<tr><td>Hypertension</td><td></td><td></td></tr>
<tr><td>PE/E</td><td>133</td><td>5.2 (4.3-6.1)</td></tr>
<tr><td>Other gestational hypertension</td><td>888</td><td>4.6 (4.3-5)</td></tr>
</table>
</td>
<td>Study participation: low risk
Study attrition: low risk
Prognostic factor measurement: low risk
Outcome measurement: low risk
Study confounding: low risk
Statistical analysis and reporting: low risk
Overall risk of bias: low risk (high quality study)</td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr><td>supported by the following organisations: Fonds de reserche du Quebec-Sante (FQRS) and Canadian Institutes of Health Rearch (CIHR)</td><td>between 18 weeks' GA and 6 weeks post-delivery): 1) a diagnosis of hypertensive disorders of pregnancy, including GH, PE, eclampsia, hypertension complicating pregnancy, toxoaemia, transient hypertension in pregnancy, benign essential hypertension in pregnancy, and hypertension combined with proteinuria; 2) a new diagnosis of hypertension in women with normal BP before 18 weeks' GA; 3) sBP/dBP ≥140/90 mmHg measured twice; 4) a first dBP reading ≥ 110 mmHg; 5) new use of an anti-hypertensive medication.</td><td></td><td></td><td></td></tr>
<tr><td>Full citation

Hermes, W, Franx, A, Pampus, Mg, Bloemenkamp, Kw, Bots, Ml, Post, Ja, Porath, M, Ponjee, Ga, Tamsma, Jt, Mol, Bw, Groot, Cj, Cardiovascular risk factors in women who had hypertensive disorders late in pregnancy: a cohort study, American Journal of Obstetrics</td><td>Inclusion criteria
Exposure group:women with gestational hypertension or pre-eclampsia at term
Control group: women with normotensive pregnancies at term

Exclusion criteria
Exposure group: regnant or lactating women, those who were taking antihypertensive medication for chronic hypertension, diabetes mellitus, gestational diabetes treated with insulin, renal disease, previous C-section, HELLP, oliguria < 500 ml/24 h, fetal anomalies,IUGR, abnormal fetal-heart</td><td>Factors included in adjustment
BMI, parity, smoking

Follow-up
2.5 years</td><td>Results<table><tr><th></th><th>Exposure group (N=306)</th><th>Control (N=99)</th><th>Adjusted OR (95% CI)</th></tr><tr><td>Hypertension ≥140/90</td><td>105 (34)</td><td>1 (1)</td><td>47.5 (6.5-350)</td></tr></table></td><td>Details
Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: low risk
Study attrition: high risk (n=175 women were lost to follow-up and no reasons were provided, n=168 women refused participation)</td></tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>and Gynecology, 208, 474.e1-8, 2013

Ref Id

842717

Country/ies where the study was carried out

The Netherlands

Study type
Prospective cohort study

Study dates
June 2008-November 2010

Source of funding
Nuts Ohra Foundation</td>
<td>rate monitoring, HIV, pulmonary edema or cyanosis, use of IV antihypertensive medication
Control group: HELLP, gestational hypertension, PE, diabetes, IUGR, renal disease, heart disease, HV, premature delivery

Sample size
N=405

Maternal characteristics
Maternal baseline characteristics at index pregnancy
<table>
<tr><th></th><th>Exposure group (N=306)</th><th>Control (N=99)</th></tr>
<tr><td>Age, years, mean (SD)</td><td>31 (5.1)</td><td>31 (4.5)</td></tr>
<tr><td>Nulliparous, n (%)</td><td>211 (69)</td><td>30 (30)</td></tr>
<tr><td>sBP at booking, mmHg, mean (SD)</td><td>120 (12)</td><td>113 (11)</td></tr>
</table>
</td>
<td></td>
<td></td>
<td>Prognostic factor measurement: low risk
Outcome measurement: low risk
Study confounding:low risk
Statistical analysis and reporting: low risk
Overall risk of bias: moderate risk of bias (moderate quality study)</td>
</tr>
</table>

Study details	Participants	Methods	Results	Limitations
	dBP at booking, mmHg, mean (SD) 73 (9) 66 (7.6) **GA at delivery, weeks, mean (SD)** 39.4 (1.3) 39.9 (1.2) Pre-eclampsia: *dBP ≥90 mmHg measured twice at least 6 hours apart, in combination with proteinuria (≥ 2 occurrences of protein on a dipstick, or>300 mg of total protein collection within 24h, or protein: creatinine ratio >30 mg/mmol)* *Gestational hypertension: dBP ≥95 mmHg measured twice at least 6 hours apart without proteinuria*			
Full citation Li, X. L., Chen, T. T., Dong, X., Gou, W. L., Lau, S., Stone, P., Chen, Q., Early onset preeclampsia in subsequent pregnancies correlates with early onset preeclampsia in first pregnancy,	**Inclusion criteria** Not reported **Exclusion criteria** Not reported **Sample size** N=55	**Factors included in adjustment** Not applicable **Follow-up** Subsequent pregnancy. Follow-up length was not reported	**Results** 55 out of 92 (59.8%) of women developed recurrent pre-eclampsia	**Details** Based on the NICE manual 2014 checklist for prognostic studies and QUIPS **Study participation**: high risk of bias (inclusion and exclusion criteria have not been described)

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>European Journal of Obstetrics, Gynecology, & Reproductive Biology, 177, 94-9, 2014

Ref Id

385751

Country/ies where the study was carried out

China

Study type
Retrospective cohort study

Study dates
January 2008-December 2012

Source of funding
National Key Discipline of Obstetric of China</td>
<td>Maternal characteristics
Maternal characteristics (index pregnancy)
<table>
<tr><th></th><th>Recurrent PE (N=55)</th><th>No recurrent PE (N=37)</th></tr>
<tr><td>Age, years, mean (SD)</td><td>25 (21-37)</td><td>25 (19-33)</td></tr>
<tr><td>Pre-eclampsia, n (%)</td><td>55 (100)</td><td>37 (100)</td></tr>
<tr><td>sBP, mmHg, median (range)</td><td>160 (140-185)</td><td>160 (140-200)</td></tr>
<tr><td>dBP, mmHg, median (range)</td><td>100 (90-110)</td><td>100 (90-130)</td></tr>
<tr><td>GA at delivery, weeks, median (range)</td><td>36 (23-41)</td><td>36 (32-42)</td></tr>
</table>
</td>
<td></td>
<td></td>
<td>Study attrition: low risk of bias (no loss to follow-up have been described)
Prognostic factor measurement: low risk of bias (prognostic factor is adequately measured)
Outcome measurement: low risk of bias (outcome is adequately measured, with follow-up length reported)
Study confounding: low risk of bias (not applicable)
Statistical analysis and reporting: low risk of bias
Overall risk of bias: moderate risk of bias (moderate quality evidence)</td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr><td></td><td>Maternal characteristics (second pregnancy)
<table>
<tr><th></th><th>Recurrent PE (n=55)</th><th>No recurrent PE (n=37)</th></tr>
<tr><td>Age, years, mean</td><td>32 (20-40)</td><td>27 (22-36)</td></tr>
<tr><td>sBP, mmHg, median (range)</td><td>165 (130-220)</td><td>125 (110-135)</td></tr>
<tr><td>dBP, mmHg, median (range)</td><td>110 (90-140)</td><td>75 (65-85)</td></tr>
<tr><td>GA at delivery, weeks, median (range)</td><td>35 (24-41)</td><td>39 (36-41)</td></tr>
</table></td><td></td><td></td><td></td></tr>
<tr><td>Full citation

Mahande, Michael J., Daltveit, Anne K., Mmbaga, Blandina T., Masenga, Gileard, Obure, Joseph, Manongi, Rachel, Lie, Rolv T.,</td><td>Inclusion criteria
Women with at least 2 singleton births during the study period

Exclusion criteria
Women referred from rural areas, women with multiple pregnancies.</td><td>Factors included in adjustment
Maternal age and education

Follow-up
Any future pregnancy, median follow-up: 6.5 years</td><td>Results
<table>
<tr><th>First pregnancy (n)</th><th>Pre-eclampsia in subsequent pregnancy</th><th>RR (95 CI)</th></tr>
</table></td><td>Details
Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: low risk</td></tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>Recurrence of preeclampsia in northern Tanzania: a registry-based cohort study, PLoS ONE, 8, e79116, 2013

Ref Id

803647

Country/ies where the study was carried out

Tanzania

Study type
Prospective cohort study

Study dates
2000-2010

Source of funding
Norwegian Council for Higher Education´s Program for Development Research or Nasjonalt program for Utviklimg,</td>
<td>Sample size
N=3909

Maternal characteristics
<table>
<tr><th></th><th>No PE</th><th>PE</th></tr>
<tr><td>Age, years, mean (SD)</td><td>25.9 (4.9)</td><td>27.4 (4.9)</td></tr>
<tr><td>Gestational hypertension, n (%)</td><td>14 (0.3)</td><td>4 (22)</td></tr>
<tr><td>Chronic hypertension, n (%)</td><td>36 (0.9)</td><td>11 (23.4)</td></tr>
<tr><td>GA at delivery, weeks, mean (SD)</td><td>38.9 (2.7)</td><td>37.0 (3.3)</td></tr>
</table>
</td>
<td></td>
<td>
<table>
<tr><td>Pre-eclampsia (171)</td><td>42 (24.6)</td><td>9.2 (6.4 13.</td></tr>
<tr><td>Chronic hypertension (63)</td><td>18 (28.6)</td><td>8.9 (5.7 13.</td></tr>
</table>
</td>
<td>Study attrition: low risk
Prognostic factor measurement: low risk
Outcome measurement: low risk
Study confounding: low risk
Statistical analysis and reporting: low risk
Overall risk of bias: low risk (high quality study)</td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr><td>Forskning og Utdanning (NUFU) and Quota Scholarship Scheme</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Full citation

Mannisto, T., Mendola, P., Vaarasmaki, M., Jarvelin, M. R., Hartikainen, A. L., Pouta, A., Suvanto, E., Elevated blood pressure in pregnancy and subsequent chronic disease risk, Circulation, 127, 681-90, 2013

Ref Id

419049

Country/ies where the study was carried out

Finland

Study type</td><td>Inclusion criteria
Singleton women who gave birth to live-born and stillborn infants of >28 weeks gestational age who had a birth weight ≥600 g

Exclusion criteria
Those with missing blood pressure measurements, those who died.

Sample size
N= 8453 (n= 6552 were normotensive; n= 991 presented with gestational hypertension; n= 668 presented with chronic hypertension)

Maternal characteristics</td><td>Factors included in adjustment
Pre-pregnancy BMI, smoking, parity, diabetes mellitus before pregnancy, and socioeconomic status

Follow-up
Median 39.4 (range 3-43.6 years)</td><td>Results<table><tr><td></td><td colspan="3">1st pregnancy</td></tr><tr><td></td><td>Normotensive (n=6552)</td><td>Gestational hypertension</td><td>Chronic hypertension (n=668)</td></tr><tr><td>MACE</td><td></td><td></td><td></td></tr><tr><td>Prevalence</td><td>1633 (24.9)</td><td>357 (36.1)</td><td>377 (50.4)</td></tr><tr><td>HR (95% CI)</td><td>Reference</td><td>1.45 (1.29-1.63)</td><td>1.66 (1.46-1.88)</td></tr></table></td><td>Details
Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: low risk
Study attrition: low risk
Prognostic factor measurement: low risk
Outcome measurement: low risk
Study confounding: low risk
Statistical analysis and reporting: low risk
Overall risk of bias: low risk</td></tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>Prospective cohort study

Study dates
1972-2008

Source of funding
Intramural Research Program of the National Institutes of Health, Eunice Kennedy Shriver National Institute of Child Health and Human Development, Academy of Finland</td>
<td>
<table>
<tr><th></th><th>Normotensive (n=6552)</th><th>Gestational hypertension (n=991)</th><th>Chronic hypertension</th></tr>
<tr><td>Age at birth, mean (SD)</td><td>26.6 (6.2)</td><td>27.8 (7.3)</td><td>31.5 (7.1</td></tr>
<tr><td>Nullipara, n (%)</td><td>2028 (30.9)</td><td>402 (40.6)</td><td>142 (21.3)</td></tr>
</table>
Normotensive : BP <145/95 (because in the 1960s, clinical blood pressure used to be rounded up to the nearest 5 mmHg
Gestational hypertension: new-onset hypertension after 20 weeks gestation with no proteinuria
Chronic hypertension: hypertension before 20 week gestation continuing throughout the pregnancy, and up to 6 weeks after pregnancy; or a history of chronic hypertension and/or antihypertensive use without evidence of proteinuria
</td>
<td></td>
<td>
<table>
<tr><td>Stroke</td><td></td><td></td><td></td></tr>
<tr><td>Prevalence</td><td>300 (4.6)</td><td>84 (8.5)</td><td>26 (12.9)</td></tr>
<tr><td>HR (95% CI)</td><td>Reference</td><td>1.59 (1.24-2.04)</td><td>1.80 (1.39-2.34)</td></tr>
<tr><td>Hypertension</td><td></td><td></td><td></td></tr>
<tr><td>Prevalence</td><td>1374 (21)</td><td>423 (42.7)</td><td>415 (62.1)</td></tr>
<tr><td>HR (95% CI)</td><td>Reference</td><td>2.53 (2.25 - 2.84)</td><td>Not estimated</td></tr>
</table>
</td>
<td></td>
</tr>
<tr><th>Full citation</th><th>Inclusion criteria</th><th>Factors included in adjustment</th><th>Results
Adjusted relative risks</th><th>Details</th></tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>McDonald, Sarah D., Malinowski, Ann, Zhou, Qi, Yusuf, Salim, Devereaux, Philip J., Cardiovascular sequelae of preeclampsia/eclampsia: a systematic review and meta-analyses, American Heart Journal, 156, 918-30, 2008

Ref Id

842945

Country/ies where the study was carried out

Canada

Study type
Systematic review and meta-analysis

Study dates
Studies published between 1996 and 2006 were published</td>
<td>Cohort or case-control studies, published in any language, including >9 participants which examined the development of cardiac mortality > 6 weeks postpartum in women with a history of pre-eclampsia or eclampsia compared to women who were normotensive during pregnancy

Exclusion criteria
Studies not adjusting for confounders

Sample size
10 observational studies were included (n= 118 407)

Maternal characteristics
<table>
<tr><th>Study</th><th>Country</th><th>No of cases</th><th>No of controls</th><th>Follow-up</th></tr>
</table>
</td>
<td>Factors varied across studies but, overall, studies controlled for the following factors: age, age at delivery, socioeconomic status, co-occurring conditions, pre-term delivery, and smoking status

Follow-up
Please see 'maternal characteristics' section</td>
<td>
<table>
<tr><th>Outcome</th><th>RR (95% CI)</th></tr>
<tr><td>MACE</td><td>2.33 (1.95-2.78)</td></tr>
<tr><td>Stroke</td><td>2.03 (1.54-2.67)</td></tr>
<tr><td>Cardiovascular mortality</td><td>2.29 (1.73-3.04)</td></tr>
</table>
</td>
<td>ROB assessed using AMSTAR checklist
Total score: 13/16
The following items were not met by the study authors:
• no list of excluded studies was provided
• sources of funding of the included studies were not reported
• risk of bias was not taken into account when discussing the study results</td>
</tr>
</table>

Study details	Participants					Methods	Results	Limitations
Source of funding Regional Medical Association; Hamilton Health Sciences; Canadian Institutes of Health Research	**Jonsdottir**	Iceland	203	7340	Mean 42 y			
	Hannaford	England	3000	18451	25-26 y (unclear whether mean or median)			
	Irgens	Norway	24155	602117	Median 13 y			
	Smith	Scotland	18487	84487	15-19 y			
	Kestenbaum	USA	20552	132069	Mean 7.8 y			

Study details	Participants					Methods	Results	Limitations
	Wilson	Scotland	1043	796	10-48 y (unclear whether mean or median)			
	Funai	Jerusalem	1055	36858	Median 30 y			
	Kaaja 2005	Finland	397	3162	28 (unclear whether mean or median)			
	Ray 2005	Canada	36982	989283	Median 8.7 y			
	Wikstrom	Sweden	12533	383081	19-28 y (unclear whether mean or median)			
Full citation	**Inclusion criteria**					**Factors included in adjustment** Not applicable	**Results**	**Details**

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>McDonald, Sarah D., Ray, Joel, Teo, Koon, Jung, Hyejung, Salehian, Omid, Yusuf, Salim, Lonn, Eva, Measures of cardiovascular risk and subclinical atherosclerosis in a cohort of women with a remote history of preeclampsia, Atherosclerosis, 229, 234-9, 2013

Ref Id

813422

Country/ies where the study was carried out

Canada

Study type
Nested cohort study

Study dates
January 1986-December 1995</td>
<td>Exposure group:women who had PE during their index pregnancy
Control group: women without any history of PE in any previous pregnancy

Exclusion criteria
Exclusion criteria for exposure and control groups: women with gestational hypertension, chronic hypertension, known CVD, liver disease, renal disease, or any other chronic conditions, hypothyroidism, women who had been pregnant within 6 months of the current study visit

Sample size
N=328

Maternal characteristics
<table>
<tr><th></th><th>Presence of PE in previous pregnancy (N=109)</th><th>Absence of PE in previous pregnancy</th></tr>
</table>
</td>
<td>Follow-up
Median 20 years</td>
<td>
<table>
<tr><th></th><th>Exposure group (N=109)</th><th>Control group (N=219)</th></tr>
<tr><td>sBP/dBP ≥140/90</td><td>14 (12.8)</td><td>15 (6.9)</td></tr>
</table>
</td>
<td>Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: low risk
Study attrition: low risk
Prognostic factor measurement: low risk
Outcome measurement: low risk
Study confounding: low risk
Statistical analysis and reporting: low risk
Overall risk of bias: low risk</td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>Source of funding
Heart and Stroke Foundation, Canadian Institutes of Health Research</td>
<td>
<table>
<tr><td>Age at recruitment, years, median (IQR)</td><td>49 (44-55)</td><td>49 (45-56)</td></tr>
<tr><td>Chronic hypertension before pregnancy, n (%)</td><td>35 (32.1)</td><td>22 (10.1)</td></tr>
</table>
</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full citation

Melamed, Nir, Hadar, Eran, Peled, Yoav, Hod, Moshe, Wiznitzer, Arnon, Yogev, Yariv, Risk for recurrence of preeclampsia and outcome of subsequent pregnancy in women with preeclampsia in their first pregnancy, The journal of maternal-fetal & neonatal medicine : the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies,</td>
<td>Inclusion criteria
Nulliparous women, diagnosed with PE between 1996 and 2008. A control group of nulliparous women who did not develop PE was also included

Exclusion criteria
Women with pre-term births prior to 24 gestational weeks, birthweight < 500g, and fetal malformations

Sample size
600 women diagnosed with PE, matched with a control group of nulliparous women who did not develop PE in a 3:1 ratio (N=1800)

Maternal characteristics</td>
<td>Factors included in adjustment
Not applicable

Follow-up
Subsequent pregnancy. Follow-up length was not reported</td>
<td>Results
<table>
<tr><td></td><td colspan="2">Subsequent pregnancy</td></tr>
<tr><td>Outcome</td><td>Exposure group (N=289)</td><td>Control (N=896)</td></tr>
<tr><td>Chronic hypertension</td><td>17 (5.9)</td><td>0 (0.0)</td></tr>
<tr><td>Gestational hypertension</td><td>23 (8.0)</td><td>8 (0.9)</td></tr>
<tr><td>Pre-eclampsia</td><td>17 (5.9)</td><td>7 (0.8)</td></tr>
</table>
</td>
<td>Details
Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: low risk of bias
Study attrition: low risk of bias (no loss to follow-up have been reported)
Prognostic factor measurement: low risk of bias
Outcome measurement: low risk of bias (although follow-up length has not been reported)</td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>the International Society of Perinatal Obstetricians, 25, 2248-51, 2012

Ref Id

842952

Country/ies where the study was carried out

Israel

Study type
Retrospective cohort study

Study dates
1996-2008

Source of funding
Not reported</td>
<td>Maternal characteristics (index pregnancy)
<table>
<tr><th></th><th>Previous PE (N=289)</th><th>Control (N=896)</th></tr>
<tr><td>Age, years, mean (SD)</td><td>28.6 (5.8)</td><td>28.4 (4.7)</td></tr>
<tr><td>Severe PE, n (%)</td><td>196 (32.7)</td><td>N/A</td></tr>
<tr><td>GA at delivery < 37 weeks</td><td>285 (47.5)</td><td>166 (9.2)</td></tr>
<tr><td>GA at delivery < 34 weeks</td><td>117 (19.5)</td><td>43 (2.4)</td></tr>
<tr><td>GA at delivery < 32 weeks</td><td>54 (9.1)</td><td>22 (1.2)</td></tr>
<tr><td>GA at delivery < 28 weeks</td><td>10 (1.7)</td><td>3 (0.2)</td></tr>
<tr><td>Placental abruption, n (%)</td><td>14 (2.3)</td><td>10 (0.6)</td></tr>
<tr><td>Chronic hypertension</td><td>23 (3.8)</td><td>0 (0.0)</td></tr>
</table></td>
<td></td>
<td></td>
<td>Study confounding: low risk of bias (not applicable)
Statistical analysis and reporting: low risk of bias
Overall risk of bias: Low (high quality evidence)</td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>Full citation

Mito, Asako, Arata, Naoko, Qiu, Dongmei, Sakamoto, Naoko, Murashima, Atsuko, Ichihara, Atsuhiro, Matsuoka, Ryu, Sekizawa, Akihiko, Ohya, Yukihiro, Kitagawa, Michihiro, Hypertensive disorders of pregnancy: a strong risk factor for subsequent hypertension 5 years after delivery, Hypertension research : official journal of the Japanese Society of Hypertension, 41, 141-146, 2018

Ref Id

842975

Country/ies where the study was carried out

Japan</td>
<td>Inclusion criteria
Exposure group: pregnant women who had hypertensive disorders of pregnancy (pre-eclampsia or gestational hypertension; 2015 Best Practice Guide for Care and Treatment of Hypertension in Pregnancy criteria)
Control group: women with normal deliveries

Exclusion criteria
Multiple pregnancies, women who had miscarriages or stillbirths, women with chronic hypertension, diabetes mellitus, kidney disease before pregnancy, hypertension (sBP/dBP ≥140/90), no documented BP before 20 weeks

Sample size
N=751

Maternal characteristics
Maternal characteristics at index pregnancy
<table>
<tr><th></th><th>Women with HDP</th><th>Control</th></tr>
</table>
</td>
<td>Factors included in adjustment
Age, BMI, family history of hypertension, and salt intake

Follow-up
5 years</td>
<td>Results
<table>
<tr><th></th><th>Exposure group (N=25)</th><th>Control group (N=746)</th><th>Adjusted OR (95% CI)</th></tr>
<tr><td>Hypertension, n (%)</td><td>6 (24)</td><td>19 (2.5)p<0.001</td><td>7.1 (2.0-25.6)</td></tr>
</table>
</td>
<td>Details
Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: low risk
Study attrition: low risk
Prognostic factor measurement: low risk
Outcome measurement: low risk
Study confounding: low risk
Statistical analysis and reporting: low risk
Overall risk of bias: low risk</td>
</tr>
</table>

Study details	Participants			Methods	Results	Limitations
Study type Retrospective cohort study **Study dates** October 2003-December 2005 **Source of funding** Health and Labour Sciences Research Grant from the Ministry of Health, Labour and Welfare of Japan and National Center for Child Health and Development of Japan	**Age, years, mean (SD)**	35.3 (5)	33.9 (3.9)			
	Maximum sBP, mmHg, mean (SD)	124.7 (13)	115.4 (10.3)			
	Maximum dBP, mmHg, mean (SD)	77.6 (9.2)	70.7 (7.7)			
	GA at delivery, weeks, mean (SD)	37.1 (3.2)	39.2 (1.6)			
Full citation Mongraw-Chaffin, Morgana L., Cirillo, Piera M., Cohn, Barbara A., Preeclampsia and cardiovascular	**Inclusion criteria** Women with no previously diagnosed heart conditions **Exclusion criteria** Multiple births, pregnancies with missing parity, pregnancies that ended in			**Factors included in adjustment** Not reported, but the authors report that HRs have been adjusted for confounders **Follow-up** Median 37 years	**Results** **HR (95% CI) for cardiovascular mortality** HR = 2.14 (1.29-3.57) HR <34 weeks of gestation = 9.54 (4.50-20.26)	**Details** **Based on the NICE manual 2014 checklist for prognostic studies and QUIPS** **Study participation**: low risk

Study details	Participants	Methods	Results	Limitations
disease death: prospective evidence from the child health and development studies cohort, Hypertension (Dallas, Tex. : 1979), 56, 166-71, 2010 **Ref Id** 842982 **Country/ies where the study was carried out** USA **Study type** Prospective cohort study **Study dates** 1959-1967 **Source of funding** The National Institute of Health	abortion or still birth prior 20 weeks gestational age **Sample size** N=14403, of which N=481 had pre-eclampsia **Maternal characteristics** Information regarding maternal age or gestational age has not been reported. Median age at enrolment was 26 years old and median age of death was 65 years. No definition for pre-eclampsia was provided			**Study attrition:** low risk **Prognostic factor measurement:** low risk **Outcome measurement:** low risk **Study confounding:** high risk (authors do not report the factors the analyses were adjusted for) **Statistical analysis and reporting:** low risk **Overall risk of bias: moderate risk**

Study details	Participants	Methods	Results	Limitations
Full citation Nzelu, Diane, Dumitrascu-Biris, Dan, Hunt, Katharine F., Cordina, Mark, Kametas, Nikos A., Pregnancy outcomes in women with previous gestational hypertension: A cohort study to guide counselling and management, Pregnancy Hypertension, 2017 **Ref Id** 843026 **Country/ies where the study was carried out** UK **Study type** Retrospective cohort study **Study dates**	**Inclusion criteria** Pregnant women with a history of hypertensive disorders of pregnancy **Exclusion criteria** Women with chronic hypertension, women after 20 weeks gestation, with chronic hypertension, renal or liver disease, multiple pregnancy, or current pregnancy complicated by fetal anomaly or miscarriage **Sample size** N=773 **Maternal characteristics** **Maternal characteristics of women who had complications during the subsequent pregnancy* and who did not have complications during the subsequent pregnancy**	**Factors included in adjustment** NA **Follow-up** Any future pregnancy. Follow-up length was not reported	**Results** **Prevalence of HDP in subsequent pregnancy:** N=375 women developed complications during the subsequent pregnancy*. N= 270/773 (34.9%) had pregnancies complicated by HDP: 97/773 (12.5%) PE and 173/773 (22.4%) GH. *Note that the original study aimed to capture women who had a range of complications during subsequent pregnancy (obstetric, fetal and maternal), although in this evidence table only the ones related with hypertensive disorders of pregnancy are captured	**Details** **Based on the NICE manual 2014 checklist for prognostic studies and QUIPS** **Study participation**: low risk **Study attrition:** low risk **Prognostic factor measurement:** low risk **Outcome measurement:** low risk **Study confounding:** low risk **Statistical analysis and reporting:** low risk **Overall risk of bias:** low risk (high quality evidence)

Study details	Participants			Methods	Results	Limitations
January 2011 and January 2016 **Source of funding** Not reported		**Women without complications during subsequent pregnancy (N=398)**	**Women with complications during subsequent pregnancy (N=375)**			
	Age, years, median (IQR)	32.0 (29-36)	33.0 (29-37)			
	Gestational age of onset of hypertension in previous pregnancy, mean (SD)	36.1 (4.7)	35.7 (4.7			
	GA < 34 w, n (%)	31 (22.9)	103 (27.4			
	GA 34-37 w, n (%)	79 (19.9)	81 (21.5)			
	GA 37.1-40 w, n (%)	111 (28.0)	95 (25.3)			
	GA > 40 w, n (%)	116 (29.2)	97 (25.8)			

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr><td></td><td><table><tr><td>Booking sBP, mmHg, median (IQR)</td><td>110 (100-119)</td><td>115 (110-122)</td></tr><tr><td>Booking dBP, mmHg, median (IQR)</td><td>67.0 (60-71)</td><td>70.0 (65-78)</td></tr></table>*The study aimed to capture women who had a range of complications during subsequent pregnancy (obstetric, fetal and maternal), although in this evidence table only the ones related with hypertensive disorders of pregnancy are captured</td><td></td><td></td><td></td></tr>
<tr><td>Full citation

Scholten, R. R., Hopman, M. T. E., Sweep, F. C. G. J., Vlugt, M. J. V. D., Dijk, A. P. V., Oyen, W. J., Lotgering, F. K., Spaanderman, M. E. A., Co-occurrence of cardiovascular and prothrombotic risk factors in women with a history of preeclampsia,</td><td>Inclusion criteria
Parous, non-pregnant women who presented with pre-eclampsia during their index pregnancy.
Pre-eclampsia was defined as sBP/dBP ≥140/90 mmHg measured twice, 6 or more hours apart, and proteinuria ≥ 300mg for 24 hours after 20 weeks gestational age in previously normotensive women

Exclusion criteria
Not reported</td><td>Factors included in adjustment
Not applicable

Follow-up
6-12 months after pregnancy</td><td>Results
Prevalence of hypertension (n, %) stratified by GA of women at index pregnancy<table><tr><td></td><td>22-28 weeks (N=143)</td><td>28-32 weeks (N=357)</td><td>32-37 weeks (N=501)</td><td>≥37 weeks (N=233)</td></tr></table></td><td>Details
Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: low risk
Study attrition: moderate risk (4.85% of the women included in the original sample were excluded</td></tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>Obstetrics and Gynecology, 121, 97-105, 2013

Ref Id

843185

Country/ies where the study was carried out

The Netherlands

Study type
Retrospective cohort study

Study dates
January 2004-December 2010

Source of funding
Not reported</td>
<td>Sample size
N=1234

Maternal characteristics
<table>
<tr><th></th><th>Total N= 1234</th></tr>
<tr><td>Age, years, mean (SD)</td><td>32 (4)</td></tr>
<tr><td>Use of antihypertensive medication, n (%)</td><td>180 (15)</td></tr>
<tr><td>Additional dx of HELLP, n (%)</td><td>654 (53)</td></tr>
<tr><td>Additional dx of growth-restricted neonate, n (%)</td><td>432 (35)</td></tr>
<tr><td>sBP, mmHg, mean (SD)</td><td>120 (15)</td></tr>
<tr><td>dBP, mmHg, mean (SD)</td><td>73 (11)</td></tr>
<tr><td>GA at delivery, weeks, median (range)</td><td>33 (29-36)</td></tr>
</table>
</td>
<td></td>
<td>
<table>
<tr><td>Hypertension
(n, %)</td><td>46
(32.1)</td><td>107
(29.9)</td><td>122
(24.9)</td><td>43
(18.3)</td></tr>
</table>
Hypertension: sBP/dBP ≥140/85 mmHg, or latent hypertension as reduced plasma volume (= 1405 mL/m2) or increased total peripheral vascular resistance (>1600 dynes x sec/cm5), or both
</td>
<td>because of missing data, but no attempt was made to assess whether the characteristics of these women differ from the ones studied)
Prognostic factor measurement: low risk
Outcome measurement: low risk
Study confounding: low risk
Statistical analysis and reporting: low risk
Overall risk of bias: moderate risk of bias (moderate quality evidence)</td>
</tr>
<tr><th>Full citation</th><th>Inclusion criteria</th><th>Factors included in adjustment</th><th>Results</th><th>Details</th></tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>Tooher, J., Chiu, C. L., Yeung, K., Lupton, S. J., Thornton, C., Makris, A., O'Loughlin, A., Hennessy, A., Lind, J. M., High blood pressure during pregnancy is associated with future cardiovascular disease: An observational cohort study, BMJ Open, 3, e002964, 2013

Ref Id

843297

Country/ies where the study was carried out

Australia

Study type
Retrospective cohort study

Study dates
January 2006- April 2009</td>
<td>Women ≥45 y/o; having gave birth between 18 and 45 yo, normotensive prior their index pregnancy, not having had a hysterectomy or both ovaries removed

Exclusion criteria
Women who had invalid or missing data in the questionnaire that it was conducted, women who were told that they had HBP but were not treated for it

Sample size
N= 71819

Maternal characteristics
No data regarding age, different categories of HDP, BO, or GA at delivery was provided. No definition of the different HDP was provided</td>
<td>Country of origin, SES, BMI, smoking status, alcohol consumption, degree of physical activity, family hx of stroke, hx of COC use, hx of menopausal hormone therapy, and number of children

Follow-up
Not reported</td>
<td>
<table>
<tr><th>Subsequent pregnancy outcome</th><th>Age threshold</th><th>Women with HDP at their index pregnancy</th><th>Women without HDP at their index pregnancy</th><th>Adjusted OR (95% CI)</th></tr>
<tr><td>High blood pressure</td><td><58</td><td>31935</td><td>3854</td><td>3.79 (3.38-4.24)</td></tr>
<tr><td></td><td>≥58</td><td>32178</td><td>3852</td><td>2.83 (2.58-3.12)</td></tr>
<tr><td>Stroke</td><td><58</td><td>35613</td><td>176</td><td>1.69 (1.02-2.82)</td></tr>
<tr><td></td><td>≥58</td><td>35128</td><td>902</td><td>1.46 (1.13-1.88)</td></tr>
</table>
No definition for stroke or HBP was provided
</td>
<td>Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: low risk
Study attrition: low risk
Prognostic factor measurement: high risk of bias (method for prognostic factor measurement is subject to recall bias as it was based on a questionnaire completed at recruitment. No definition for HDP was provided.)
Outcome measurement: high risk of bias (the method of outcome measurement is not reliable and subject to recall bias as it was based on a questionnaire completed at recruitment. No definition for stroke or HBP was provided)</td>
</tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr><td>Source of funding
Sax Institute, Cancer Council in NSW, National Heart Foundation of Australia, NSW Ministry of Health, beyondblue, the national depression initiative, Ageing, Disability and Home Care, NSW Family and Community Services, Austrlian Red Cross Blood Service and Uniting Care Ageing</td><td></td><td></td><td></td><td>Study confounding: high risk of bias (the measurement of confounders is not reliable as it is based on a questionnaire completed at recruitment)
Statistical analysis and reporting: low risk
Overall risk of bias: very high risk of bias (very low quality evidence)</td></tr>
<tr><td>Full citation

Tooher, Jane, Thornton, Charlene, Makris, Angela, Ogle, Robert, Korda, Andrew, Hennessy, Annemarie, All Hypertensive Disorders of Pregnancy Increase the Risk of Future</td><td>Inclusion criteria
Women who had been diagnosed with any HDP during the antenatal, peripartum, intrapartum or postnatal period according to the ICD-9 criteria and who gave birth during the study period at a metropolitan tertiary hospital in Sydney

Exclusion criteria</td><td>Factors included in adjustment
Age, gestation and parity

Follow-up
Not reported</td><td>Results
Adjusted OR (95% CI) for presence of future hypertension, MADE or stroke in women with PE and gestational hypertension
<table><tr><td></td><td>PE
OR (95% CI)</td><td>GH
OR (95% CI)</td></tr></table></td><td>Details
Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: low risk
Study attrition: low risk</td></tr>
</table>

Study details	Participants	Methods	Results			Limitations
Cardiovascular Disease, Hypertension (Dallas, Tex. : 1979), 70, 798-803, 2017 **Ref Id** 756245 **Country/ies where the study was carried out** Australia **Study type** Retrospective cohort study **Study dates** January 1980 to December 1989 **Source of funding** The main author received a scholarship from Preeclampsia Research Laboratories (PEARLS)	Not reported **Sample size** N= 1158 **Maternal characteristics** Of the women included, N=162 (13.9%) had PE, N= 322 (27.8%) had GH, N= 56 (4.8%) had CHT and N=43 (3.7%) had PE superimposed on CHT Other details regarding maternal age or gestational age have not been reported		**Hypertension**	3.06 (2.18-4.29)	4.08 (3.23-5.10)	**Prognostic factor measurement:** low risk **Outcome measurement:** low risk **Study confounding:** low risk **Statistical analysis and reporting:** low risk **Overall risk of bias: low risk**
			MACE	2.67 (1.49-4.81)	3.19 (2.11-4.83)	
			Stroke	2.03 (0.75-5.49)	0.57 (0.14-2.31)	

Study details	Participants	Methods	Results	Limitations
Full citation Tooher, Jane, Thornton, Charlene, Makris, Angela, Ogle, Robert, Korda, Andrew, Horvath, John, Hennessy, Annemarie, Hypertension in pregnancy and long-term cardiovascular mortality: a retrospective cohort study, American Journal of Obstetrics and Gynecology, 214, 722.e1-6, 2016 **Ref Id** 843299 **Country/ies where the study was carried out** Australia **Study type** Retrospective cohort study	**Inclusion criteria** Not reported **Exclusion criteria** Not reported **Sample size** N= 4387 women with hypertension in their pregnancy **Maternal characteristics** **Mortality cause by first pregnancy outcome*** PE (N=365) GH (N=625) CHT (N=98) Superimposed PE (N=76)	**Factors included in adjustment** Not applicable **Follow-up** 9 years	**Results** **Mortality due to cardiovascular disease (ICD-9 AM criteria)** OR (95% CI) 1.93 (1.05-3.55)	**Details** **Based on the NICE manual 2014 checklist for prognostic studies and QUIPS** **Study participation**: low risk **Study attrition:** unclear risk (the characteristics of a subsample of women are reported, but is unclear whether this subsample of women were selected randomly or not) **Prognostic factor measurement:** low risk **Outcome measurement:** low risk **Study confounding:** low risk **Statistical analysis and reporting:** low risk **Overall risk of bias: moderate risk**

Study details	Participants	Methods	Results	Limitations
Study dates 1980-1989 **Source of funding** PEARLS (Preeclampsia Research Laboratories)	<table><tr><td>**Age (at birth of baby)**</td><td>30 (25-33)</td><td>30 (23.5-32.5)</td><td>33.5 (31-36)</td><td>29 (24-35)</td></tr><tr><td>**Primiparous, n (%)**</td><td>260 (73)</td><td>391 (63)</td><td>38 (39)</td><td>44 (58)</td></tr><tr><td>**Gestation at delivery, median (IQR)**</td><td>35 (33-37)</td><td>37 (36-37.5)</td><td>36.5 (35-38)</td><td>35 (31.1-38)</td></tr></table>PE = Increase in blood pressure after 20 weeks gestation plus ≥1 other organ manifestation, including proteinuria (>300 mg/24 hours), biochemical, neurologic, hematologic or hepatic impairment, acute pulmonary oedema, fetal growth restriction or placental abruption GH=sBP/dBP ≥140/90 mmHg after 20 weeks gestational age with no previous history of renal disease or hypertension before the pregnancy or significant proteinuria CHT = sBP/dBP ≥140/90 mmHg preconception or associated with renal disease, endocrine disorders, renovascular disease, or cardiac disease before 20 weeks gestational age and not associated with systemic features of pre-eclampsia			

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr><td></td><td>*The records of N=1155 women were reviewed, although the total N of women who had HDP was N=4387.</td><td></td><td></td><td></td></tr>
<tr><td>Full citation

van Oostwaard, Miriam F., Langenveld, Josje, Schuit, Ewoud, Papatsonis, Dimitri N. M., Brown, Mark A., Byaruhanga, Romano N., Bhattacharya, Sohinee, Campbell, Doris M., Chappell, Lucy C., Chiaffarino, Francesca, Crippa, Isabella, Facchinetti, Fabio, Ferrazzani, Sergio, Ferrazzi, Enrico, Figueiro-Filho, Ernesto A., Gaugler-Senden, Ingrid P. M., Haavaldsen, Camilla, Lykke, Jacob A., Mbah, Alfred K., Oliveira, Vanessa M., Poston, Lucilla, Redman, Christopher W. G.,</td><td>Inclusion criteria
Data of women who had a hypertensive pregnancy followed by a subsequent pregnancy.

Exclusion criteria
Case control studies (only those reporting recurrence were included)

Sample size
99415 women

Maternal characteristics
Maternal characteristics during index pregnancy
<table>
<tr><th></th><th>Total N</th><th>Measure</th></tr>
<tr><td>Age, years, mean (SD)</td><td>97832</td><td>25 (5)</td></tr>
</table></td><td>Factors included in adjustment
Not reported

Follow-up
Subsequent pregnancy for pre-eclampsia and gestational hypertension; any future date for chronic hypertension</td><td>Results
Recurrence rates of hypertensive disorders of pregnancy
<table>
<tr><th>Type of HDP at subsequent pregnancy</th><th colspan="3">Index pregnancy</th></tr>
<tr><th></th><th>Any HDP</th><th>GH</th><th>PE</th></tr>
<tr><td>Any HDP*</td><td>20.7% (20.4%-20.9%)</td><td>21.5%</td><td>20.4%</td></tr>
<tr><td>GH</td><td>8.6% (8.4%-8.8%)</td><td>14.5%</td><td>6%</td></tr>
<tr><td>PE</td><td>13.8% (13.6-14.1%)</td><td>7.1%</td><td>16%</td></tr>
</table>
*Total N does not add up because different numbers of women in which the HDP were recorded</td><td>Details
Limitations have been assessed using AMSTAR
Total score: 12/16. The following issues were not met in this IPD MA: review authors did not provide a list of excluded studies, justifying the exclusions; unclear whether data extraction was performed in duplicate; sources of funding of the included studies were not reported; publication bias was not discussed</td></tr>
</table>

Study details	Participants			Methods	Results	Limitations
Salim, Raed, Thilaganathan, Baskaran, Vergani, Patrizia, Zhang, Jun, Steegers, Eric A. P., Mol, Ben Willem J., Ganzevoort, Wessel, Recurrence of hypertensive disorders of pregnancy: an individual patient data metaanalysis, American Journal of Obstetrics and Gynecology, 212, 624.e1-17, 2015 **Ref Id** 756256 **Country/ies where the study was carried out** The Netherlands **Study type** Individual patient data meta-analysis of cohort studies **Study dates**	**Gestational hypertension, n (%)**	99400	23970 (24)			
	Pre-eclampsia, n (%)	99202	75172 (76)			
	Eclampsia, n (%)	26665	2087 (8)			
	HELLP, n (%)	40236	512 (1.3)			
	Chronic hypertension before pregnancy, n (%)	26879	2032 (8)			
	Placental abruption, n (%)	51803	1221 (2.4)			
	Maximum sBP, mmHg, mean (SD)	632	161 (21)			
	Maximum dBP, mmHg, mean (SD)	1028	103 (11)			
	GA at delivery, weeks, mean (SD)	94178	39 (20)			

Study details	Participants			Methods	Results	Limitations
Studies published between 1994 and 2014 **Source of funding** Not reported	**Premature delivery <28w, n (%)**	94197	739 (0.8)			
	Premature delivery <34w, n (%)	94353	5363 (5.7)			
	Premature delivery <37w, n (%)	94965	14521 (15)			
	Preeclampsia: hypertension (diastolic blood pressure at least 90 mm Hg or systolic blood pressure at least 140 mm Hg on 2 occasions that were 4 to 5 hours apart) in combination with proteinuria (a positive [0.3g/L] proteinuria dipstick test, a protein/creatinine ratio of at least 30 mg/mmol in a random sample or a urine protein excretion of at least 300 mg for 24 hours) after 20 weeks' gestation. Gestational hypertension: hypertension at later than 20 weeks' gestation without proteinuria or a significant rise in blood pressure (if a woman had known chronic hypertension). Superimposed preeclampsia: women with chronic hypertension and proteinuria or a sudden increase in proteinuria if already present. HELLP syndrome: (elevated lactate dehydrogenase levels [at least 600 U/L], elevated liver enzymes by levels of aspartate transaminase or alanine					

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr><td></td><td>transferase at least 70 U/L, nd low platelets less than 100,000/mm).</td><td></td><td></td><td></td></tr>
<tr><td>Full citation

Wu, Pensee, Haththotuwa, Randula, Kwok, Chun Shing, Babu, Aswin, Kotronias, Rafail A., Rushton, Claire, Zaman, Azfar, Fryer, Anthony A., Kadam, Umesh, Chew-Graham, Carolyn A., Mamas, Mamas A., Preeclampsia and Future Cardiovascular Health: A Systematic Review and Meta-Analysis, Circulation. Cardiovascular quality and outcomes, 10, 2017

Ref Id

843408</td><td>Inclusion criteria
Studies including one group of women with pre-eclampsia and another group of women without pre-eclampsia (with no restrictions in the definition) assessing long-term cardiovascular outcomes. Studies had to report enough data to calculate risk estimates

Exclusion criteria
Studies looking at outcomes during antepartum or before 6 weeks postpartum

Sample size
K= 22
Risk of coronary heart disease with pre-eclampsia outcome, n= 2 068 628
Risk of cardiovascular disease death with pre-eclampsia outcome, n= 2 683 840
Risk of stroke with pre-eclampsia outcome, n= 4 131 299</td><td>Factors included in adjustment<table><tr><th>Study</th><th>Adjustment</th></tr><tr><td>Bhattacharya 2012</td><td>Women's year of birth, smoking, SES</td></tr><tr><td>Hovsepian 2014</td><td>Age, ethnicity, insurance status, PE, eclampsia, peripartum haemorrhage/ infection, pregnancy-related hematologic disorders, hypertension, type 2 diabetes mellitus, congestive heart failure, chronic kidney disease, coronary heart</td></tr></table></td><td>Results
RR (95% CI)
Risk of coronary heart disease with pre-eclampsia outcome, RR 2.50 (1.43 to 4.37)
Risk of cardiovascular disease death with pre-eclampsia outcome, RR 2.21 (1.83 to 2.66)
Risk of stroke with pre-eclampsia outcome, RR 1.81 (1.29 to 2.55)</td><td>Details
ROB assessed using AMSTAR checklist
Total score: 14/16
The following items were not met by the study authors:
· no list of excluded studies was provided
· sources of funding of the included studies were not reported</td></tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>Country/ies where the study was carried out
UK

Study type
Systematic review and meta-analysis

Study dates
Studies published between 2005 and August 2015

Source of funding
Grant from the North Staffordshire Heart Committee; 2 of the authors are funded by the National Institute for Health Research Academic Clinical Fellowships</td>
<td>Maternal characteristics
<table>
<tr><th>Study</th><th>N</th><th>Mean age at index pregnancy</th></tr>
<tr><td>Bhattacharya 2012</td><td>2563</td><td>24.4</td></tr>
<tr><td>Hovsepian 2014</td><td>2 066 230</td><td>28.3</td></tr>
<tr><td>Kaaja 2005</td><td>3559</td><td>26.7</td></tr>
<tr><td>Lin 2011 and Tang 2009</td><td>1 132 019</td><td>Unclear</td></tr>
<tr><td>Mannisto 2013</td><td>4445</td><td>26.7</td></tr>
<tr><td>Savitz 2014</td><td>849 639</td><td>Unclear</td></tr>
<tr><td>Stuart 2013</td><td>53 003</td><td>Unclear</td></tr>
<tr><td>Funai 2005</td><td>37 913</td><td>26.2</td></tr>
<tr><td>Lykkee 2009 and Lykke 2010</td><td>677 761</td><td>26.8</td></tr>
</table></td>
<td><table>
<tr><td></td><td>disease, peripheral vascular disease, atrial fibrillation, tobacco and alcohol use.</td></tr>
<tr><td>Kaaja 2005</td><td>Age at first birth, age, parity, BMI, increased blood cholesterol, HTN, DM, impaired glucose tolerance, angina pectoris, myocardial infarction</td></tr>
</table></td>
<td></td>
<td></td>
</tr>
</table>

Study details	Participants			Methods		Results	Limitations
	Skjaerven 2012	836 147	Unclear	Lin 2011 and Tang 2009	Age, years of education, marital status, multiple gestations, infant sex, birthweight, parity, long term HTN, pregnancy-related HTN, type 2 diabetes mellitus, antepartum haemorrhage, postpartum haemorrhage, lupus		
				Mannisto 2013	Pre-pregnancy BMI, smoking, parity, diabetes mellitus before pregnancy, and socioeconomic status		

Study details	Participants	Methods		Results	Limitations
		Savitz 2014	Year, age, ethnicity, health insurance, gestational diabetes mellitus, parity, SES, smoking, prenatal care, pre-pregnancy weight		
		Stuart 2013	Age, ethnicity, parental history of MI aged<60 y/o, pre-pregnancy smoking, BMI		
		Funai 2005	SES, type 2 diabetes mellitus, gestational diabetes		
		Lykkee 2009 and Lykke 2010	Age, year of birth, placental abruption and stillbirth		

Study details	Participants	Methods	Results	Limitations
		Skjaerven 2012 — Maternal education, maternal age at first birth, and year of first birth **Follow-up** **Study** — **Follow-up** Bhattacharya 2012 — Mean 34.5 y Hovsepian 2014 — 6 weeks postpartum Kaaja 2005 — 17 years Lin 2011 and Tang 2009 — At least 3 y Mannisto 2013 — 39.4 y		

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr><td></td><td></td><td><table><tr><td>Savitz 2014</td><td>Within 1 y</td></tr><tr><td>Stuart 2013</td><td>8 y</td></tr><tr><td>Funai 2005</td><td>Median 30 years</td></tr><tr><td>Lykkee 2009 and Lykke 2010</td><td>Median 14.6 y</td></tr><tr><td>Skjaerven 2012</td><td>Median 25 years</td></tr></table></td><td></td><td></td></tr>
<tr><td>Full citation

Yeh, J. S., Cheng, H. M., Hsu, P. F., Sung, S. H., Liu, W. L., Fang, H. L., Chuang, S. Y., Synergistic effect of gestational hypertension and postpartum incident hypertension on cardiovascular health: A nationwide</td><td>Inclusion criteria
For the exposure sample, women with gestational hypertension, pre-eclampsia and eclampsia who had no history of CVD requiring hospitalisation in the 12 months before delivery were identified.
For the control group, women without any GH, PE or eclampsia during pregnancy were identified and matched with the exposure group for age and date of delivery.
All diagnoses were based on the ICD-9-CM criteria</td><td>Factors included in adjustment
The study did not control for confounding factors because the information on possible variables is not routinely collected in the National Health Insurance Research Database

Follow-up
Median 5.8 years (IQR 2.9-8.7 y)</td><td>Results<table><tr><td></td><td>Women with HDP during pregnancy (N=1260)</td><td>Women without HDP during pregnancy (N=5040)</td></tr><tr><td>Hypertension</td><td></td><td></td></tr><tr><td>Total N</td><td>158 (12.5%)</td><td>95 (1.88%)</td></tr></table></td><td>Details
Based on the NICE manual 2014 checklist for prognostic studies and QUIPS
Study participation: low risk
Study attrition: low risk
Prognostic factor measurement: low risk</td></tr>
</table>

<table>
<tr><th>Study details</th><th>Participants</th><th>Methods</th><th>Results</th><th>Limitations</th></tr>
<tr>
<td>population study, European Heart Journal, 35, 368, 2014

Ref Id

843419

Country/ies where the study was carried out

Taiwan

Study type
Retrospective cohort study

Study dates
1st January 1997 to 31 December 2009

Source of funding
Taipei Medical University, National Health Research Institutes, National Health Insurance Research Database, National Research Institutes</td>
<td>Exclusion criteria
Not reported

Sample size
N= 6300 women

Maternal characteristics
<table>
<tr><th></th><th>Exposure group (N=1260)</th><th>Control group (N=5040)</th></tr>
<tr><td>Age during pregnancy, years, mean (SD)</td><td>29.87 (4.14)</td><td>29.87 (4.14)</td></tr>
<tr><td>Gestational hypertension without PE or eclampsia, n (%)</td><td>725 (57.54)</td><td>-</td></tr>
</table>
</td>
<td></td>
<td>
<table>
<tr><td>Incidence per 1000 person</td><td>24.93</td><td>3.36</td></tr>
<tr><td>HR (95% CI)</td><td>8.29 (6.30-10.91)</td><td>Reference</td></tr>
<tr><td>CVD</td><td></td><td></td></tr>
<tr><td>Total N</td><td>68 (5.39%)</td><td>114 (2.26)</td></tr>
<tr><td>Incidence per 1000 person</td><td>9.74</td><td>3.99</td></tr>
<tr><td>HR (95% CI)</td><td>2.44 (1.80-3.31)</td><td>Reference</td></tr>
</table>
CVD (ICD-9 code 390-459)
Hypertension (ICD-9 code 401-405)
</td>
<td>Outcome measurement: low risk
Study confounding: low risk
Statistical analysis and reporting: low risk
Overall risk of bias: low risk of bias (high quality evidence)</td>
</tr>
</table>

Study details	Participants			Methods	Results	Limitations
	Pre-eclampsia, n (%)	493 (39.13)	-			
	Eclampsia, n (%)	42 (3.33)	-			
	HDP occurred after 36w, n (%)	640 (50.79)	-			
	HDP occurred after the first delivery, n (%)	876 (69.52)	-			
	HDP occurred after the second delivery, n (%)	324 (25.71)	-			
	HDP occurred beyond the third delivery, n (%)	60 (4.77)	-			