Periodontal Disease and Pregnancy Outcomes: Overview of Systematic Reviews

L.A. Daalderop, B.V. Wieland, K. Tomsin, L. Reyes, B.W. Kramer, S.F. Vanterpool, and J.V. Been

Appendix

Additional References

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Xiong X, Buekens P, Vastardis S, Yu SM. 2007. Periodontal disease and pregnancy outcomes: state-of-the-science. Obstet Gynecol Surv. 62(9):605-15.

Appendix Figure. MEDLINE search strategy

((((((("Pregnancy"[Mesh]) OR pregnan*) OR gestation*) OR gravid*) OR preconception*) OR conception)) AND ((((((((((((((((("Periodontal Diseases"[Mesh:NoExp]) OR "Gingival Diseases"[Mesh:NoExp]) OR "Gingivitis"[Mesh]) OR "Periodontitis"[Mesh]) OR "Periodontal Index"[Mesh:NoExp]) OR "Oral Health"[Mesh:NoExp])) OR periodontal disease*) OR gingiv*) OR gum disease*) OR "gingival health") OR swollen gum*) OR "bleeding on probing") OR periodont*) OR parodont*) OR paradont*) OR "periodontal index") OR "oral health") OR "oral disease")) AND (((((("Review" [Publication Type:NoExp]) OR "Meta-Analysis" [Publication Type:NoExp])) OR "systematic review") OR review) OR meta-analy*) OR metaanaly*)

Appendix Table 1. Data extraction form

Article ID:
Data Extractor:
Date:

General info of the review	
Citation	
Author names and institutions *(In order of appearance)*	
Contact information corresponding author	
Classification *(Systematic review or systematic review and meta-analysis)*	
Conflict of interests	
Funding	
Registration details of the review protocol	
Objective/research question (PICO(T))	

Methods applied during the systematic review		***Page/Paragraph in article***
Information sources used		
Search strategy including search periods		
Applied limitations during search		
Study selection process		
Eligibility criteria		
Definition of periodontal disease		
Outcome(s) for which data was sought		
Definition of		

outcome(s)		
Data collection process		
List all data extracted from the primary studies		
Methods for data synthesis *(meta-analysis)*		
Methodological details of meta-bias assessment *(e.g. publication bias)*		
Methods used for assessing risk of bias of individual studies *(Quality analysis, which tool was used, mean score and score range)*		

Results of the systematic review		***Page/Paragraph in article***
Number and study design of primary studies included in the review		
Total number of participants included in the review		
Study population characteristics		
Countries where studies have been conducted		
Was risk of bias presented for each included study: yes/no		
Was risk of bias across studies presented: yes/no		
Was risk of bias used in data-synthesis: yes/no		
Main Findings		

Results of meta-analysis *(OR/RR, 95%-CI)*		
Results of subgroup analysis *(OR/RR, 95%-CI)*		
Brief summary of results if no meta-analysis was performed		
Describe results from any additional analyses done		
Results of any meta-bias (e.g. publication bias)		

Discussion of the systematic review		***Page/Paragraph in article***
Relevant limitations identified by the authors		
Overall conclusions of the systematic review		

AMSTAR Score	

Discrepancies between outcomes mentioned in the review protocol and published report of the systematic review

Appendix Table 2. Overview of excluded studies and reason for exclusion

First author (year)	Reference	Reason for exclusion
Polyzos (2010)	Polyzos NP, Polyzos IP, Zavos A, Valachis A, Mauri D, Papanikolaou EG, Tzioras S, Weber D, and Messinis IE. Obstetric outcomes after treatment of periodontal disease during pregnancy: systematic review and meta-analysis. BMJ. 2010 Dec 29;341:c7017	No comparison between woman with and without PD
Polyzos (2009)	Polyzos NP, Polyzos IP, Mauri D, Tzioras S, Tsappi M, Cortinovis I, and Casazza G. Effect of periodontal disease treatment during pregnancy on preterm birth incidence: a metaanalysis of randomized trials (Structured abstract). Am J Obstet and Gynecol. 2009 Mar;200(3): 225-232	No comparison between woman with and without PD
Boutin (2013)	Boutin A, Demers S, Roberge S, Roy-Morency A, Chandad F, and Bujold E. Treatment of periodontal disease and prevention of preterm birth: systematic review and meta-analysis. Am J Perinatol. 2013 Aug;30(7):537-44	No comparison between woman with and without PD
Rosa (2012)	Rosa MI, Pires PD, Medeiros LR, Edelweiss MI, and Martinez-Mesa J. Periodontal disease treatment and risk of preterm birth: a systematic review and meta-analysis. Cad Saude Publica. 2012 Oct;28(10):1823-33.	No comparison between woman with and without PD
Uppal (2010)	Uppal A, Uppal S, Pinto A, Dutta M, Shrivatsa S, Dandolu V, and Mupparapu M. The effectiveness of periodontal disease treatment during pregnancy in reducing the risk of experiencing preterm birth and low birth weight: a meta-analysis. J Am Dent Assoc. 2010 Dec;141(12):1423-34	No comparison between woman with and without PD
George (2011)	George A, Shamim S, Johnson M, Ajwani S, Bhole S, Blinkhorn A, Ellis S, and Andrews K. Periodontal treatment during pregnancy and birth outcomes: a meta-analysis of randomised trials. Int J Evid Based Healthc. 2011 Jun;9(2):122-47.	No comparison between woman with and without PD
Kim (2012)	Kim AJ, Lo AJ, Pullin DA, Thornton-Johnson DS, and Karimbux NY. Scaling and root planing treatment for periodontitis to reduce preterm birth and low birth weight: a systematic review and meta-analysis of randomized controlled trials. J Periodontol. 2012 Dec;83(12):1508-19.	No comparison between woman with and without PD
Shah (2013)	Shah M, Muley A, and Muley P. Effect of nonsurgical periodontal therapy during gestation period on adverse pregnancy outcome: a systematic review. J Matern Fetal Neonatal Med. 2013 Nov;26(17):1691-5.	No comparison between woman with and without PD
Michalowicz (2013)	Michalowicz BS, Gustafsson A, Thumbigere-Math V, and Buhlin K. The effects of periodontal treatment on pregnancy outcomes. J Periodontol. 2013 Apr;84(4	Non systematic review

	Suppl):S195-208	
Fogacci (2011)	Fogacci MF, Vettore MV, and Thome Leao AT. The effect of periodontal therapy on preterm low birth weight: a meta-analysis. Obstet Gynecol. 2011 Jan;117(1):153-65.	No comparison between woman with and without PD
Chambrone (2011)	Chambrone L, Pannuti CM, Guglielmetti MR, and Chambrone LA. Evidence grade associating periodontitis with preterm birth and/or low birth weight: II: a systematic review of randomized trials evaluating the effects of periodontal treatment. J Clin Periodontol. 2011 Oct;38(10):902-14.	No comparison between woman with and without PD
Morency (2007)	Morency AM, and Bujold E. The effect of second-trimester antibiotic therapy on the rate of preterm birth. J Obstet Gynaecol Can. 2007 Jan;29(1):35-44.	No comparison between woman with and without PD
Crowther (2005)	Crowther Caroline A, Thomas N, Middleton P, Chua M-C, and Esposito M. Treating periodontal disease for preventing preterm birth in pregnant women. Cochrane Database of Systematic Reviews. 2005.	No comparison between woman with and without PD
Schwendicke (2015)	Schwendicke F, Karimbux N, Allareddy V, and Gluud C. Periodontal treatment for preventing adverse pregnancy outcomes: a meta- and trial sequential analysis. PLoS One. 2015 Jun 2;10(6):e0129060.	No comparison between woman with and without PD
Lopez (2015)	Lopez NJ, Uribe S, and Martinez B. Effect of periodontal treatment on preterm birth rate: a systematic review of meta-analyses. Periodontol 2000. 2015 Feb;67(1):87-130.	No comparison between woman with and without PD
Stadelmann (2013)	Stadelmann P, Alessandri R, Eick S, Salvi GE, Surbek D, and Sculean A. The potential association between gingival crevicular fluid inflammatory mediators and adverse pregnancy outcomes: a systematic review. Clin Oral Investig. 2013 Jul;17(6):1453-63.	No comparison between woman with and without PD
Shanthi (2012)	Shanthi V, Vanka A, Bhambal A, Saxena V, Saxena S, and Kumar SS. Association of pregnant women periodontal status to preterm and low-birth weight babies: A systematic and evidence-based review. Dent Res J (Isfahan). 2012 Jul;9(4):368-80.	Non systematic review
Krejci (2012)	Krejci CB, and Bissada NF. Women's health: periodontitis and its relation to hormonal changes, adverse pregnancy outcomes and osteoporosis. Oral Health Prev Dent. 2012;10(1): 83-92.	Full text unobtainable
Condylis (2013)	Condylis B, Le Borgne H, Demoersman J, Campard G, Philippe HJ, and Soueidan A. [Interest of periodontitis screening and treatment in pregnancy: systematic review]. J Gynecol Obstet Biol Reprod (Paris). 2013 Oct;42(6):511-7	No comparison between woman with and without PD

Baskaradoss (2012)	Baskaradoss JK, Geevarghese A, and Al Dosari AA. Causes of adverse pregnancy outcomes and the role of maternal periodontal status - a review of the literature. Open Dent J. 2012;6:79-84	Non systematic review
Azarpazhooh (2012)	Azarpazhooh A, and Tenenbaum HC. Separating fact from fiction: use of high-level evidence from research syntheses to identify diseases and disorders associated with periodontal disease. J Can Dent Assoc. 2012;78:c25	Non systematic review
Cetin (2012)	Cetin I, Pileri P, Villa A, Calabrese S, Ottolenghi L, and Abati S. Pathogenic mechanisms linking periodontal diseases with adverse pregnancy outcomes. Reprod Sci; 2012 Jun;19(6):633-41	Non systematic review
Horton (2012)	Horton AL, and Boggess KA. Periodontal disease and preterm birth. Obstet Gynecol Clin North Am. 2012 Mar;39(1):17-23	Non systematic review
Garcia (2011)	Garcia R. Scaling and root debridement in pregnant women did not result in fewer preterm births. Evid Based Dent. 2011 Dec;12(4):112	Commentary on systematic review
Huck (2011)	Huck O, Tenenbaum H, and Davideau JL. Relationship between periodontal diseases and preterm birth: recent epidemiological and biological data. J Pregnancy. 2011;2011:164654	Non systematic review
Africa (2011)	Africa CW. Oral colonization of Gram-negative anaerobes as a risk factor for preterm delivery. Virulence. 2011 Nov-Dec;2(6):498-508	Non systematic review
Baccaglini (2011)	Baccaglini L. A meta-analysis of randomized controlled trials shows no evidence that periodontal treatment during pregnancy prevents adverse pregnancy outcomes. J Am Dent Assoc. 2011 Oct;142(10):1192-3	Commentary on systematic review
Xiong (2011)	Xiong X, Buekens P, Goldenberg RL, Offenbacher S, and Qian X. Optimal timing of periodontal disease treatment for prevention of adverse pregnancy outcomes: before or during pregnancy? Am J Obstet Gynecol. 2011 Aug;205(2):111.e1-6	Non systematic review
Sanu (2011)	Sanu O, and Lamont RF. Periodontal disease and bacterial vaginosis as genetic and environmental markers for the risk of spontaneous preterm labor and preterm birth. J Matern Fetal Neonatal Med. 2011 Dec;24(12):1476-85	Non systematic review
Fogacci (2011)	Fogacci MF, Vettore MV, and Leao AT. The effect of periodontal therapy on preterm low birth weight: a meta-analysis. Obstet Gynecol. 2011 Jan;117(1):153-65	No comparison between woman with and without PD
Matevosyan (2011)	Matevosyan NR. Periodontal disease and perinatal outcomes. Arch Gynecol Obstet. 2011 Apr;283(4):675-86	No comprehensive search performed
Pimentel (2010)	Pimentel Lopes De Oliveira GJ, Amaral Fontanari L, Chaves De Souza JA, Ribeiro Costa M, and Cirelli JA. Effect of periodontal treatment on the	No comparison between woman with and without PD

	incidence of preterm delivery: a systematic review. Minerva Stomatol. 2010 Oct;59(10):543-50	
Ramchandani (2010)	Ramchandani M, Siddiqui M, Kanwar R, Lakha M, Phi L, Giacomelli L, and Chiappelli F. Proteomic signature of periodontal disease in pregnancy: Predictive validity for adverse outcomes. Bioinformation. 2010 Jan 6;5(7):300-3	Systematic review of systematic reviews reporting on PD and adverse pregnancy outcomes
Mayer (2008)	Mayer Y, Levin L, Oettinger-Barak O, and Machtei E. [Pregnancy and periodontal disease--is there a relation?]. Refuat Hapeh Vehashinayim (1993). 2008. Jan;25(1):24-33	Non systematic review
Vergnes (2008)	Vergnes JN. Studies suggest an association between maternal periodontal disease and pre-eclampsia. Evid Based Dent. 2008;9(2):46-7	Commentary on systematic review
Sacco (2008)	Sacco G, Carmagnola D, Abati S, Luglio PF, Ottolenghi L, Villa A, Maida C, and Campus G. Periodontal disease and preterm birth relationship: a review of the literature. Minerva Stomatol. 2008 May; 57(5):233-50	Non systematic review
Dasanayake (2008)	Dasanayake AP, Gennaro S, Hendricks-Munoz KD, and Chhun N. Maternal periodontal disease, pregnancy, and neonatal outcomes MCN Am J Matern Child Nurs. 2008 Jan-Feb;33(1):45-9	Non systematic review
Michalowicz (2007)	Michalowicz BS, and Durand R. Maternal periodontal disease and spontaneous preterm birth. Periodontol 2000. 2007;44:103-12	Non systematic review
Clothier (2007)	Clothier B, Stringer M, and Jeffcoat MK. Periodontal disease and pregnancy outcomes: exposure, risk and intervention. Best Pract Res Clin Obstet Gynaecol. 2007 Jun;21(3):451-66	Non systematic review
Nugent (2006)	Nugent JL, and Baker PN. Periodontal disease and adverse pregnancy outcomes: a systematic review. BJOG. 2006 Jul;113(7):848;author reply 848-9	Correspondent article
Qureshi (2005)	Qureshi A, Ijaz S, Syed A, and Khan AA. Periodontal infection: a potential risk factor for pre-term delivery of low birth weight (PLBW) babies. J Pak Med Assoc. 2005 Oct;55(10):448-52	Non systematic review
Pizzo (2005)	Pizzo G, La Cara M, Conti Nibali M, and Guiglia R. Periodontitis and preterm delivery. A review of the literature. Minerva Stomatol. 2005 Jan-Feb;54(1-2):1-14	Non systematic review
Yeo (2005)	Yeo BK, Lim LP, Paquette DW, and Williams RC. Periodontal disease -- the emergence of a risk for systemic conditions: pre-term low birth weight. Ann Acad Med Singapore. 2005 Jan;34(1):111-6	Non systematic review
Offenbacher (2004)	Offenbacher S. Maternal periodontal infections, prematurity, and growth restriction. Clin Obstet Gynecol. 2004 Dec;47(4):808-21;discussion 881-2	Non systematic review

Konopka (2004)	Konopka T. [Periodontitis and preterm low birth weight]. Ginekol Pol. 2004 May;75(5):397-403	Non systematic review
Radnai (2002)	Radnai M, and Gorzo I. [Periodontal disease as a potential risk factor for preterm birth and low birth weight (Literature review)]. Fogorv Sz. 2002 Dec;95(6):241-4	Non systematic review
Dasanayake (2003)	Dasanayake AP, Russell S, Boyd D, Madianos PN, Forster T, and Hill E Preterm low birth weight and periodontal disease among African Americans. Dent Clin North Am. 2003 Jan;47(1):115-25, x-xi	Non systematic review
Jeffcoat (2001)	Jeffcoat MK, Geurs NC, Reddy MS, Goldenberg RL, and Hauth JC. Current evidence regarding periodontal disease as a risk factor in preterm birth. Ann Periodontol. 2001 Dec;6(1):183-8	Non systematic review
Zachariasen (1998)	Zachariasen RD, and Dennison DK. Periodontal disease and preterm low birth weight deliveries. J Gt Houst Dent Soc. 1998 Nov;70(4):16-9	Non systematic review
Offenbacher (1998)	Offenbacher S, Beck JD, Lieff S, and Slade G. Role of periodontitis in systemic health: spontaneous preterm birth. J Dent Educ. 1998 Oct;62(10):852-8	Non systematic review
Misrath (2014)	Misrath Banu MA, and Ramamurthy J. Periodontitis a risk factor for pre-eclampsia in pregnant women. Int J Pharm Bio Sci. 2014;5(2):B736-B739	Non systematic review
Patil (2013)	Patil RB, and Shettar SS. Oral health considerations in pregnant women- A review. Indian J Public Health. 2013;4(2):199-202	Non systematic review
Rosa (2012)	da Rosa MI, Pires PDS, Medeiros LR, Edelweiss MI, and Martinez-Mesa J. Periodontal disease treatment and risk of preterm birth: A systematic review and meta-analysis. Cad Saude Publica. 2012;28(10): 1823-1833	No comparison between woman with and without PD
Polyzos (2011)	Polyzos NP, Polyzos IP, Zavos A, Valachis A, Mauri D, Papanikolaou EG, Tzioras S, Weber D, and Messinis IE. Obstetric outcomes after treatment of periodontal disease during pregnancy: Systematic review and meta-analysis. BMJ. 2011;342(7788): 91	No comparison between woman with and without PD
Macones (2011)	Macones G. Treatment of periodontal disease in pregnancy. BMJ. 2011;342(7788): 59	Editorial
Pires (2012)	Pires PS, Medeiros LR, Simoes PW, Silva NC, Silva BR, Silva FR, Lumertz S, Cesconetto S, Fernandes B, and Rosa MI. Periodontal therapy and risk of preterm birth: A systematic review and meta-analysis. Int J Gunaecol Obstet. 2012;119:S747	Summary of systematic review
Corbella (2012)	Corbella S, Del Fabbro M, Taschieri S, and Francetti L. Periodontal disease and adverse pregnancy outcomes: A systematic review. Italian Oral Surgery. 2012;11(4):132-146	Summary of systematic review

Abrahamowicz (2012)	Abrahamowicz W, DarmochwallKolarz D, Gonet-Sebastianka J, Hus I, and Oleszczuk J. Adverse outcome of pregnancy in the presence of periodontal disease. Ginekologia i Poloznictwo. 2012;23(1):63-69	Non systematic review
Han (2011)	Han YW. Can oral bacteria cause pregnancy complications? Women's Health. 2011;7(4):401-404	Non systematic review
Avula (2011)	Avula H, and Avula J. Periodontal infections and adverse pregnancy outcomes: The oral health-fetal connection. J Gynecol Surg. 2011;27(1): 1-4	Non systematic review
Gilbert (2009)	Gilbert E, Wahlquist AH. Treatment of periodontal disease in pregnancy reduces preterm birth? J Natl Med Assoc. 2009;101(7):740-741	Non systematic review
Conde-Agudelo (2009)	Conde-Agudelo A, and Romero R. Maternal periodontal disease and risk of preeclampsia: A systematic review and meta-analysis. Am J Obstet and Gynecol. 2009: S285	Summary of systematic review
Kiczynska (1999)	Kiczynska M, Oleszczuk AK, Oleszczuk JJ, Slusarski P, and Keith LG. Prevention and treatment of periodontal diseases in pregnancy: A review of recent and conflicting literature. Int J Fertil Womens Med. 2008;53(5):170-175	Non systematic review
Shennan (2006)	Periodontal disease and adverse pregnancy outcomes: A systematic review – Commentary. Obstet Gynecol Surv. 2006;61(5):307-309	Editorial
Rodriguez (2004)	Rodriguez Nunez I, Lopez Castro G, Leyes Borrajo JL, Garcia Varela L, and Gallas Torreira M. Periodontal disease and its potential repercussion on the risk of prematurity [Spanish]. Rev Esp Pediatr. 2004;60(4):303-306	Non systematic review
Khan (2007)	Khan SN, Ahmad OK, and Almas K. Maternal periodontal disease and preterm low birth weight: an update. Pakistan Oral and Dental Journal. 2007;27(2):155-162	Non systematic review
Santos (2014)	Santos EB, Santos MSd, Bernhard VR, Vargas PRMd, Avila-Campos MJ, Chiarelli FM, and Feitosa ACR. Periodontopathogens and risks of pregnancy complications. A review of the literature. Perionews. 2014;8(3): 243-248	Full text unobtainable
Passini (2007)	Passini J£nior R, Nomura ML, and Politano GT? Periodontal disease and obstetrical complications: is there a risk relationship? Rev bras ginecol obstet. 2007;29(7): 370-375	Non systematic review
Cerqueira (2012)	Cerqueira FL, Barbosa VS, and Rios MdA. Maternal periodontal disease and risk for preeclampsia: literature review. Perionews. 2012;6(4):393-398	Non systematic review
Domingues (2010)	Domingues JdM, Oliveira LCBSd, Alves J, and Machado W. Periodontal disease as a possible risk factor contributing, among other classic risk factors for preterm birth and / or low birth weight: literature review. Periodontia. 2010;20(2):33-38	Non systematic review

Londono (2009)	Londoño AM, Salcedo AM, Silva IC, Vera L, and Cruz C. Periodontal disease and preeclampsia: literature review. Rev Estomat. 2009;17(1):38-44	Non systematic review
Costa (2012)	Costa LCM, Amormino SAF, Albuquerque BN, Cota LOM, Costa JEd, and Costa FO. Periodontal disease and adverse pregnancy outcomes: a critical review. Perionews. 2012;6(1):61-65	Full text unobtainable
Alves (2007)	Alves RT, Ribeiro RA, and Costa LRdRSd. Association between periodontal disease in pregnant women and preterm and/or low weight births: a review study. HU rev. 2007;33(1):29-36	Non systematic review
Michalowicz (2009)	Michalowicz BS, Novak MJ, Hodges JS, DiAngelis A, Buchanan W, Papapanou PN, Mitchell DA, Ferguson JE, Lupo V, and Bofill J. Serum inflammatory mediators in pregnancy: changes after periodontal treatment and association with pregnancy outcomes J Periodontal. 2009;80(11):1731-1741	Non systematic review
Madianos (2013)	Madianos PN, Bobetsis YA, and Offenbacher S. Adverse pregnancy outcomes (APOs) and periodontal disease: pathogenic mechanisms J Clin Periodontal. 2013;40(s14):S170-S180	Non systematic review
Vettore (2008)	Vettore M, Leão A, da Silva AM, Lamarca G, and Sheiham A. The relationship between periodontitis and preterm low birthweight J Dent Res. 2008;87(1):73-78	Non systematic review
Kumar (2013)	Kumar A, Basra M, Begum N, Rani V, Prasad S, Lamba AK, Verma M, Agarwal S, and Sharma S. Association of maternal periodontal health with adverse pregnancy outcome. J Obstet Gynaecol Res. 2013;39(1):40-45	Non systematic review
Lohsoonthorn (2009)	Lohsoonthorn V, Kungsadalpipob K, Chanchareonsook P, Limpongsanurak S, Vanichjakvong O, Sutdhibhisal S, Wongkittikraiwan N, Sookprome C, Kamolpornwijit W, Jantarasaengaram S. Is maternal periodontal disease a risk factor for preterm delivery? Am J Epidemiol. 2009;169(6):731-739	Non systematic review
Baskaradoss (2012)	Baskaradoss JK, Geevarghese A, and Al Dosari AAF. Causes of adverse pregnancy outcomes and the role of maternal periodontal status–a review of the literature. Open Dent J. 2012;6:79-84	Non systematic review
Horton (2010)	Horton AL, Boggess KA, Moss KL, Beck J, and Offenbacher S. Periodontal disease, oxidative stress, and risk for preeclampsia. J Periodontol. 2010;81(2):199-204	Non systematic review
Michalowicz (2007)	Michalowicz BS, Hodges JS, Novak MJ, Buchanan W, DiAngelis AJ, Papapanou PN, Mitchell DA, Ferguson JE, Lupo VR, and Bofill J. Change in periodontitis during pregnancy and the risk of pre‐term birth and low	Non systematic review

	birthweight. Journal Clin Periodontol. 2009;36(4):308-314	
Offenbacher (2007)	Has periodontal treatment failed to reduce adverse pregnancy outcomes? The answer may be premature. J Periodontol. 2007;78(2):195-197	Non systematic review
Lopez (2005)	López R. Periodontal disease, preterm birth and low birthweight. Evidence-based dentistry. 2005;6(4):90-91	Commentary on systematic review
Jared (2008)	Jared H, and Boggess KA. Periodontal diseases and adverse pregnancy outcomes: A review of the evidence and implications for clinical practice. American Dental Hygienists Association. 2008;82(suppl 1):24-24	Non systematic review
Marakoglu (2008)	Marakoglu I, Gursoy UK, Marakoglu K, Cakmak H, and Ataoglu T. Periodontitis as a risk factor for preterm low birth weight Yonsei medical journal. 2008;49(2):200-203	Non systematic review
Chandrapooja (2016)	Chandrapooja J, Gayathri R, Vishnupriya V. Oral health during pregnancy-a systematic review. J Phar Sci Res. 2016;8(8):841-843	Non systematic review
Esteves (2016)	Esteves Lima RP, Cyrino RM, de Carvalho Dutra B, Oliveira da Silveira J, Martins CC, Miranda Cota LO, Costa FO. Association Between Periodontitis and Gestational Diabetes Mellitus: Systematic Review and Meta-Analysis. J Periodontol. 2016 Jan;87(1):48-57	No results of interest
Jiang (2016)	Jiang H, Xiong X. Periodontitis may be Associated with Gestational Diabetes Mellitus but not Affirmatively. J Evid Based Dent Pract. 2016 Jun;16(2):121-3	Commentary on systematic review
Jingfei (2015)	Jingfei Zhang, Shasha Yu, Shengping Chen, Weiyuan Zhang. Meta-analysis of association between periodontal disease and preeclampsia. Chinese Journal of Perinatal Medicine. 2015;18(6):430-436	No comparison between woman with and without PD
Linden (2013)	Linden GJ, Gerard J, Lyons A, Scannapieco FA. Periodontal systemic associations: review of the evidence. J Clin Periodontol. 2013;40: s14	No results of interest
Vamos (2015)	Vamos CA, Thompson EL, Avendano M, Daley EM, Quinonez RB, Boggess K. Oral health promotion interventions during pregnancy: a systematic review. Community Dent Oral Epidemiol. 2015;43(5):385-396	No comparison between woman with and without PD
Ha (2016)	Ha JA. Association between periodontitis and preterm birth and low birth weight. Journal of Korean society of Dental Hygiene. 2016;16(2):155-163	Non systematic review
Maboudi (2016)	Maboudi A, Shabnam M. Preeclampsia and Periodontal Diseases: A Review Study. Journal of Mazandaran University of Medical Sciences . 2016;26(137): 224-234.	Systematic review of systematic reviews reporting on PD and adverse pregnancy outcomes

ABBREVIATIONS
PD – Periodontal disease

Appendix Table 3. Overall citation matrix table

Primary included study (first author, year)	Study classification	Country where study is conducted	Chambrone 2011	Conde-Agudelo 2008	Corbella 2012a	Corbella 2012b	Corbella 2016	Huang 2014	Ide 2013	Khader 2005	Konopka 2012	Kunnen 2010	Madianos 2002	Oliveira 2009	Rustveld 2008	Sanchez 2004	Scannapieco 2003	Sgolastra 2013	Teshome 2016	Vergnes 2007	Vettore 2006	Wei 2013	Wimmer 2008	Xiong 2006	Xiong 2007
Abati 2013	Cohort	Italy					x																		
Agueda 2008	Cohort	Spain	x		x	x	x		x		x												x		
Ahmed Haerian 2013	CC	Iran																	x						
AlHabashneh 2012	Cohort	Jordan							x																
Ali 2012	Cohort	Malaysia					x																		
Alves 2006	CC	Brazil																					x		
Arteaga-Guerra 2010	Cohort	Columbia									x														
Barak 2007	CC	Israel		x																					
Bassani 2007	CC	Brazil							x		x			x									x		x
Betleja 2004	CC	Poland									x														
Boggess 2003	Cohort	USA		x				x				x			x			x				x		x	x
Boggess 2006	Cohort	USA							x														x		x
Bosnjak 2006	CC	Croatia							x		x			x									x		x
Buduneli 2005	CC	Turkey																			x		x	x	x

Canakci 2004	CC	Turkey		x				x	x			x			x			x				x		x	x
Canakci 2007	CC	Turkey										x						x				x			
Cardoso 1999	CC	Brazil																			x				
Carta 2004	CC	Italy																			x				
Castaldi 2006	Cohort	Argentina		x								x										x			x
Chaparro 2012	CC	Chile																x							
Cisse 2015	CC	Senegal																	x						
Contreras 2006	CC	Colombia		x				x	x			x			x							x			x
Cota 2006	CC	Brazil		x					x													x			
Cruz 2005	CC	Brazil																	x		x				x
Cruz 2009	CC	Brazil				x	x		x																
Da Silva 2012	CC	Brazil																x							
Dasanayake 1998	CC	USA											x	x		x	x				x		x	x	x
Dasanayake 2001	CC	USA								x						x	x				x		x		
Davenport 1998	CC	UK												x											
Davenport 2002	CC	UK												x		x	x				x		x	x	x
Dortbudak 2005	Cohort	Austria			x						x			x						x	x		x	x	x
Ercan 2012	Cohort	Turkey							x																
Farrell 2006	Cohort	UK							x														x		x
Fraser (unpublished data)	CC	Canada																						x	
Gazolla 2007	Cohort	Brazil																					x		
Gianella 2011	CC	Italy							x																
Glesse 2004	CC	Brazil																		x					
Goepfert 2004	CC	USA			x	x	x				x			x						x	x		x	x	x
Gomes Filho 2006	CC	Brazil							x														x		
Gomes-Filho 2007	CC	Brazil									x														
Grandi 2010	CC	Argentina																	x						

Guimaraes 2010	Cohort	Brazil				x	x		x															
Guimaraes 2012	CS	Brazil					x																	
Ha 2011	CC	Korea						x									x				x			
Hasegawa 2003	CC	Japan																		x				
Heimonen 2009	CC	Finland			x				x															
Holbrook 2004	Cohort	Iceland			x															x		x	x	x
Hujoel 2006	CC	USA																						x
Iwanaga 2011	CC	Japan							x															
Jarjoura 2005	CC	USA			x	x	x		x		x			x						x	x		x	x	x
Jeffcoat 2001	Cohort	USA	x		x					x	x		x	x		x	x			x	x		x	x	x
Khader 2006	CC	Jordan		x					x			x													
Khader 2009	CC	Jordan			x						x								x						
Konopka 2003	CC	Poland									x									x	x		x		
Kukkamal 2014	CC	India																x							
Kumar 2012	Cohort	India															x							
Kumar 2013	Cohort	India						x																
Kunnen 2007	CC	Netherlands		x								x					x				x			
Le 2007	CC	Thailand							x															
Lin 2007	CC	USA			x																			
Lohsoonthorn 2009	CC	Thailand						x				x					x				x			
Lopez 2002a	Cohort	Chile			x									x								x		
Lopez 2002b	CC	Chile				x	x			x	x					x					x		x	x	x
Louro 2001	CC	Brazil																		x	x			x	x
Lunardelli 2005	CS	Brazil							x		x									x	x		x		x
Macedo 2014	CC	Brazil					x																		
Madianos 2001	Cohort	USA			x												x				x			
Mannem 2011	CC	India																	x						
Marakoglu 2008	CC	Turkey									x														

Marin 2005	CS	Brazil				x	x		x					x						x	x		x		
Meurman 2006	Cohort	Finland																					x		
Mitchell-Lewis 2001	Cohort	USA								x			x	x		x						x		x		
Mobeen 2008	Cohort	Pakistan			x																				
Mokeem 2004	CC	Saudi-Arabia												x							x	x		x	x	x
Moliterno 2005	CC	Brazil									x			x						x	x	x		x		x
Moore 2004a	Cohort	UK	x		x				x		x										x	x		x	x	x
Moore 2004b	CC	UK																				x				
Moore 2005	CC	UK			x				x					x								x		x	x	x
Moreu 2005	Cohort	Spain												x								x		x		x
Moura da Silva 2012	CC	Brazil						x															x			
Mumghamba 2007	CC	Tanzania				x	x													x						
Nabet 2010	CC	France				x	x		x			x														
Noack 2005	CC	Germany									x			x							x	x		x		x
Oettinger-Barak 2005	CC	Israel		x																						x
Offenbacher 1996	CC	USA			x					x	x		x	x		x	x				x	x		x	x	x
Offenbacher 1998	CC	USA											x			x	x					x				
Offenbacher 2001	Cohort	USA	x		x									x		x	x					x		x	x	x
Offenbacher 2006	Cohort	USA	x			x	x		x					x										x		x
Oittinen 2005	Cohort	Finland																						x		
Piscoya 2012	CC	Brazil							x																	
Pitiphat 2008	Cohort	USA	x		x																			x		
Politano 2011	CC	Brazil						x										x					x			
Radnai 2004	CC	Hungary			x	x	x							x							x	x		x	x	x
Radnai 2006	CC	Hungary			x	x	x		x		x			x										x		x
Rajapakse 2004	Cohort	Sri Lanka			x						x															
Rajapakse 2005	Cohort	Sri Lanka	x																		x	x		x	x	x
Rakoto-Alson 2010	Cohort	Madagascar	x			x	x		x																	

Robles 2004	CC	Peru																	x					
Romero 2002	Cohort	Venezuela			x												x						x	x	x
Ryu 2010	CC	Korea				x	x																		
Saddki 2008	Cohort	Malaysia	x						x																
Sanchez 2007	Cohort	USA																					x		
Santa Cruz 2013	Cohort	Spain					x																		
Santos-Pereira 2007	Cohort	Brazil							x					x									x		
Sayar 2011	CC	Iran																				x			
Sembene 2000	CC	France																		x			x	x	
Sharma 2007	Cohort	Fiji	x		x																				
Shetty 2010	CC	India						x			x						x				x			
Siqueira 2007	CC	Brazil			x	x	x		x		x														
Siqueira 2008	CC	Brazil						x	x		x						x				x			
Skuldbol 2006	CC	Denmark																				x		x	
Smitha 2013	CC	India																x							
Srinivas 2009	Cohort	USA	x		x				x		x						x								
Taghzouti 2012	CC	Canada						x	x								x				x				
Toygar 2007	Cohort	Turkey			x				x													x			
Vettore 2008	CC	Brazil							x													x			
Vogt 2010	Cohort	Brazil				x	x		x																
Wang 2012	CC	Japan															x								
Wood 2006	CC	Canada			x	x	x		x													x		x	
Xiong 2006	CC	USA																						x	

ABBREVIATIONS
CC – Case control
USA – United States of America
UK – United Kingdom
CS – Cross sectional

Appendix Table 4. Assessment of risk of bias of the included systematic reviews (AMSTAR checklist)

AUTHOR (YEAR)	'A PRIORI' DESIGN PROVIDED? (Y/N)	DUPLICATE STUDY SELECTION AND DATA EXTRACTION? (Y/N)	COMPREHENSIVE LITERATURE SEARCH PERFORMED? (Y/N)	STATUS OF PUBLICATION USED AS AN INCLUSION CRITERION? (Y/N)	LIST OF STUDIES (INCLUDED AND EXCLUDED) PROVIDED? (Y/N)	CHARACTERISTICS OF THE INCLUDED STUDIES PROVIDED? (Y/N)	SCIENTIFIC QUALITY OF THE INCLUDED STUDIES ASSESSED AND DOCUMENTED? (Y/N)	SCIENTIFIC QUALITY OF THE INCLUDED STUDIES USED APPROPRIATELY IN FORMULATING CONCLUSIONS? (Y/N)	METHODS USED TO COMBINE THE FINDINGS OF STUDIES APPROPRIATE? (Y/N)	LIKELIHOOD OF PUBLICATION BIAS ASSESSED? (Y/N)	CONFLICT OF INTEREST INCLUDED? (Y/N)	TOTAL SCORE
Chambrone (2011)	N	Y	Y	Y	N	Y	Y	Y	Y	N	N	7
Conde-Agudelo (2008)	N	N	Y	Y	N	Y	Y	Y	Y	Y	N	7
Corbella (2012a)	N	N	N	Y	N	Y	N	N	N	N	N	2
Corbella (2012b)	N	Y	N	Y	Y	Y	N	N	Y	Y	N	6
Corbella (2016)	N	Y	Y	Y	Y	Y	Y	Y	Y	N	N	8
Huang (2014)	N	N	N	Y	N	Y	Y	Y	Y	Y	N	6
Ide (2013)	N	Y	Y	Y	N	Y	Y	Y	N	N	N	6
Khader (2005)	N	Y	N	Y	N	Y	Y	Y	Y	Y	N	7
Konopka (2012)	N	N	N	Y	N	Y	Y	Y	Y	Y	N	6
Kunnen (2010)	N	Y	N	Y	Y	Y	Y	Y	Y	N	N	7
Madianos (2002)	N	N	Y	Y	N	Y	N	N	Y	N	N	4
Oliveira (2009)	N	N	N	Y	N	Y	N	N	N	N	N	2
Rustveld (2008)	N	N	N	Y	Y	Y	N	N	Y	Y	N	5
Sanchez (2004)	N	N	N	N	N	Y	N	N	N	N	N	1
Scannapieco (2003)	N	Y	N	Y	N	Y	Y	Y	N	N	N	5
Sgolastra (2013)	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	9
Teshome (2016)	N	Y	N	Y	N	Y	Y	Y	N	N	N	5
Vergnes (2007)	N	Y	N	Y	N	Y	Y	Y	Y	Y	N	7
Vettore (2006)	N	N	N	Y	N	Y	N	N	Y	Y	N	4

Wei (2013)	N	Y	N	Y	N	Y	Y	Y	Y	Y	N	7
Wimmer (2008)	N	N	N	N	N	Y	N	N	Y	N	N	2
Xiong (2006)	N	N	N	Y	N	Y	N	N	Y	N	N	3
Xiong (2007)	N	N	N	Y	N	Y	N	N	Y	N	N	3

ABBREVIATIONS
Y – Yes
N – No

Appendix Table 5. Evidence table on the association between periodontal disease and secondary outcome preeclampsia

AUTHOR (YEAR)	NUMBER OF INCLUDED PRIMARY STUDIES REPORTING ON PE	TOTAL NUMBER OF PARTICIPANTS	MAIN FINDINGS		METHODOLOGICAL QUALITY ASSESSMENT OF INCLUDED PRIMARY STUDIES (TOOL (MAX SCORE), MEAN SCORE, RANGE)	RISK OF BIAS ASSESSMENT (AMSTAR CHECKLIST, MAX 11)	SUMMARY OF FINDINGS
			RESULTS OF META-ANALYSIS: OR/RR (95%-CI)	RESULTS OF SUBGROUP ANALYSIS: OR/RR (95%-CI)			
Conde-Agudelo (2008)	9	3,912	OR 2.5 (1.4-4.1)	Of the nine primary included studies, three were not included in the meta-analysis. Of those, two reported a positive association between PD and PE (no OR/RR reported) and one found no association.	Levine et al. and Downs et al. (max. 7.0) Mean: 5.0 Range: 4.0-6.0	7	PD showed a positive association with PE.
Huang (2014)	11	3,579	OR 2.7 (1.7-4.2)	Adjustment for body weight (YES): OR 3.0 (1.2-7.7) Adjustment for body weight (NO): OR 2.3 (1.6-3.4) Adjustment for SES (YES): OR 5.2 (1.9-13.7) Adjustment for SES (NO): OR 2.6 (1.6-4.0) Case-control studies: OR 2.1 (1.3-3.4) Cohort studies: OR 5.3 (2.1-11.0) PD during pregnancy before 32 weeks: OR 3.7 (2.6–5.3) PD within 48h prior to delivery: OR 2.7 (1.4–5.2) PD within 5 day after delivery: OR 2.2 (1.2–4.3) Quality assessment ≥5: OR 2.6 (1.7-4.0) Quality assessment <5:OR 3.1 (2.0-4.8) Sample size >100: OR 2.5 (1.5-4.0) Sample size <100: OR 4.4 (1.9-10.6)	MOOSE (max. 6.0) Mean: 5.0 Range: 4.0-6.0	6	PD showed a positive association with PE, which was highly robust in subgroup and sensitivity analyses.

Ide (2013)	7	4,761	Not reported	CC studies reporting PD as a categorical variable: OR 1.6 (1.4-1.9) CC studies reporting PD as a continuous variable (PD): WMD 0.89 (0.87-0.91) (controls more PD than cases) CC studies reporting PD as a continuous variable (CAL): WMD 0.96 (0.98-0.94) (controls more CAL than cases) CC studies reporting PD as a continuous variable (BOP): WMD 7.8 (7.4-8.2) A cohort study of Boggess et al. was not included in the meta-analysis. This study reported a significant positive association between PD and PE (OR 2.4 [1.1-5.3]).	Not reported	6	There was a positive association between PD and PE in studies where PD was defined as a categorical variable or as BOP. A negative association of PD on PE was found in studies where PD was defined by PD or CAL.
Sgolastra (2013)	15	5,111	OR 2.2 (1.4-3.4)	Case-control studies: OR 2.2 (1.3-3.6) Cohort studies: OR 2.2 (0.7-7.4) PD defined by CAL and PPD: OR 2.5 (1.5-4.4) PD defined by CAL alone: OR 1.5 (0.4-5.8) PD defined by PPD alone: OR 2.9 (1.0-8.2) Mild PD: OR 0.6 (0.3-1.3) Severe PD: OR 2.3 (0.9-5.7) Secure PD diagnosis: OR 1.6 (0.7-3.8) Insecure PD diagnosis: OR 2.7 (1.6-4.4)	NOS-scale (max. 9.0) Mean: 6.7 Range: 6.0-8.0	9	PD showed a positive association with PE. This finding was not consistent in subgroup and sensitivity analyses.
Wei (2013)	15	4,711	OR 2.8 (2.0-3.9)	CC studies: OR 2.8 (1.9-4.1) Cohort studies: OR 3.1 (1.8-5.2)	NOS-scale (max. 9.0) Mean: 6.9 Range: 5.0-9.0	7	PD showed a positive association with PE.
Kunnen (2010)	12	6,244	6/12 studies reported a significant positive association between PD and PE (OR 2.1 to 20.2). One study showed a significant positive association between severe PD and PE (OR 7.9 [1.9-32.8]). One study showed a significant association between generalized periodontitis and PE (OR 2.5 [1.6-3.8]), but not between localized periodontitis and PE (OR 1.5 [0.9-2.4]). Four studies found no association between PD and PE (OR 0.7 to 1.1).		Dutch Cochrane collaboration checklist CC (max. 8.0) Mean: 6.6; Range: 5.0-8.0 Cohort (max. 9.0) Mean: 7.0; Range: 7.0 CS (max. 8.0) Mean: 5.0; Range: 5.0	7	The majority of included studies identified a positive association between PD and PE.
Rustveld (2008)	3	1,335	Three studies investigated the association between PD and PE, of which 2 reported a positive association. Only one reported an OR (OR 7.0 [1.7-29.8]). One study found no association (OR 0.9 for gingivitis and 1.2 for severe PD).		Not reported	5	PD showed a positive association with PE in two out of the three studies.
Xiong (2006)	2	1,002	Both included studies reported a significant association between PD and PE (OR 2.4 and 3.5).		Not reported	3	PD showed a positive association with PE.

Xiong (2007)	5	3,287	Four out of five studies identified a positive association between PD and PE (OR 2.4 to 3.5), whereas one did not (OR 1.0 [0.7-1.4])	Not reported	3	The majority of included studies identified a positive association between PD and PTB.

Reviews in which meta-analyses were performed are listed first, followed by reviews in which no meta-analysis was performed

ABBREVATIONS
PE – Preeclampsia
OR – Odds ratio
RR – Relative risk
CI – Confidence interval
PD – Periodontal disease
Levine et al. – Levine M, Walter S, Lee H, Haines T, Holbrook A, Moyer V. Users' guides to the medical literature. IV. How to use an article about harm. Evidence-Based Medicine Working Group. JAMA 1994;271:1615-9
Downs et al. – Downs SH, Black N. The feasibility of creating a checklist for the assessment of the methodological quality both of randomised and non-randomised studies of health care interventions. J Epidemiol Community Health 1998;52:377-84.
SES – Socio-economic status
MOOSE – Stroup DF, Berlin JA, Morton SC, et al. Meta-analysis of observational studies in epidemiology: a proposal for re- porting. Meta-analysis Of Observational Studies in Epidemiology (MOOSE) group. JAMA, 2000,283(15): 2008-2012
CC – Case control
PD – Probing depth
WMD – Weighed mean difference
CAL – Clinical attachment loss
BOP – Bleeding on probing
PPD – Probing pocket depth
NOS-scale – Newcastle-Ottawa scale

Appendix Table 6. Evidence table on the association between periodontal disease and secondary outcome low birth weight

AUTHOR (YEAR)	NUMBER OF INCLUDED PRIMARY STUDIES REPORTING ON LBW	TOTAL NUMBER OF PARTICIPANTS	MAIN FINDINGS		METHODOLOGICAL QUALITY ASSESSMENT OF INCLUDED PRIMARY STUDIES (TOOL (MAX SCORE), MEAN SCORE, RANGE)	RISK OF BIAS ASSESSMENT (AMSTAR CHECKLIST, MAX 11)	SUMMARY OF FINDINGS
			RESULTS OF META-ANALYSIS: OR/RR (95%-CI)	RESULTS OF SUBGROUP ANALYSIS: OR/RR (95%-CI)			
Chambrone (2011)	5	6,522	RR 2.1 (1.1-4.2)	PD defined by PPD and CAL: RR 1.4 (1.0-2.0) PD defined by CAL alone: RR 11.4 (4.4-29.1) Mild PD defined by PPD and CAL: RR 1.3 (0.7-2.2) Moderate-severe defined by PPD and CAL: RR 1.8 (0.7-4.6) Saddki (2008) was not included in the meta-analysis. This cohort study found a positive association between PD and LBW, with the following ORs: crude OR 4.8 (2.1-10.7) and adjusted OR 3.8 (1.3-11.1)	NOS-scale (max. 14) Mean: 12.5 Range: 11.0-13.0	7	PD showed a positive association with LBW in the overall analysis. In subgroup analyses the association between PD and LBW was only statistically significant if PD was defined by CAL alone.
Corbella (2012b)	7	4,159	OR 1.8 (1.5-2.2)	No subgroup analysis performed	Not reported	6	PD showed a significant association with LBW.
Corbella (2016)	10	5,693	RR 1.7 (1.3-2.1)	Low risk of bias: 1.8 (1.3-2.6) Moderate risk of bias: 1.4 (1.1-1.7)	Cochrane Bias Methods Group (max. 5.0) Mean: 4.6 Range: 4.0-5.0	8	PD showed a significant association with LBW. This was independent of risk of bias of individual studies.
Ide (2013)	17	13,370	Not performed	CC studies reporting PD as a categorical variable: OR 1.3 (1.1-1.7) Prospective cohort studies reporting PD as categorical variable: RR 1.7 (1.4-2.2) Prospective cohort studies reporting PD as a continuous variable (PD): WMD 0.04 (-0.1-0.2) Prospective cohort studies reporting PD as a continuous variable (CAL): WMD 1.1 (0.8-1.5)	NOS-scale (max. 8) Mean: 5.7 Range: 4-8	6	PD showed a significant association with LBW. This was consistent for case control and prospective studies reporting PD as a categorical variable. This association was no longer observed in studies reporting PD as a continuous variable.

Konopka (2012)	4	6,136	OR 1.5 (1.3-1.8)	No subgroup analysis performed	Margetts et al. (max. 100%) Mean score: 59.3 Score range: 30.0-82.0	6	PD showed a significant association with LBW.
Vergnes (2007)	Not reported	Not reported	OR 4.0 (2.1-7.9)	No subgroup analysis performed	Margetts et al. (max. 100%) Mean: 54.9 Range: 30.0-82.0	7	PD showed a significant association with LBW.
Corbella (2012a)	5	5,767	Two out of five studies found a significant positive association between PD and LBW (OR 5.5 and 20.0). One study found a significant association between severe PD and LBW (OR 2.2 [1.3-3.4]), but not between mild PD and LBW (OR 1.2 [0.9-1.7]). Two studies did not find an association.		Not reported	2	The majority of the included studies identified a positive association between PD and LBW.
Madianos (2002)	1	110	One CC study was included which reported a negative association between PD and LBW (OR 0.3 [0.1-0.7])		Not reported	4	One study included which showed a significant negative association between PD and LBW.
Oliveira (2009)	8	1,912	Seven out of eight studies reported a positive association between PD and LBW (only two studies reported an OR: 3.5 and 4.2, no 95% CI were reported). One study found no association (OR 0.9 [0.6-1.4]).		Not reported	2	The majority of included studies identified a positive association between PD and LBW.
Sanchez (2004)	3	1,197	All three studies reported a positive association between PD and LBW. Only two studies reported an OR. Dasanayake (1998) reported that women with healthier gingiva had a lower risk of LBW (OR 0.3). Lopez (2002) found an OR of 3.6 for the relationship between PD and LBW.		Not reported	1	PD showed a positive association with LBW.
Scannapieco (2003)	3	259	Three studies reported on the association between PD and LBW. One found a positive association (OR 4.1 [1.3-12.8]), and two studies found a negative association. Only one of them reported an OR (OR 0.3 [0.1-0.7]).		Newman et al. and Kahn et al. (max. 4) Mean: 3 Range: 3	5	Contradictory findings on the association between PD and LBW from two studies.
Teshome (2016)	5	1,128	All five studies reported a significant positive association between PD and LBW (OR 2.2-4.0).		NIH Checklist Mean: 10 Range: 9-11	5	PD showed a positive association with LBW.
Vettore (2006)	9	5,489	Two out of nine studies found a significant association between PD and LBW (OR 2.2 and 4.1). Seven studies found no association.		Not reported	4	The majority of included studies found no association between PD and LBW.
Wimmer (2008)	18	14,393	11/18 studies found a significant positive association between PD and LBW (OR/RR 1.1-4.2). One study found a positive association between PD and LBW only in women aged >25 years. Six studies found no association.		Not reported	2	The majority of included studies identified a positive association between PD and LBW.

Xiong (2006)	7	5,631	One study found a significant association between PD and LBW (RR 3.6 [1.1-12.2]). One study found a significant association between moderate-severe PD and LBW (OR 2.1 [1.3-3.4]), but not between mild PD and LBW (OR 1.2 [0.9-1.7]). Five studies found no association (OR/RR 0.3-7.2).	Not reported	3	The majority of included studies found no association between PD and LBW.
Xiong (2007)	13	9,984	9/13 studies identified a positive association between PD and LBW (OR/RR 1.1 to 7.2), whereas four did not.	Not reported	3	The majority of included studies identified a positive association between PD and LBW.

Reviews in which meta-analyses were performed are listed first, followed by reviews in which no meta-analysis was performed.

ABBREVATIONS
LBW – Low birth weight
OR – Odds ratio
RR – Relative risk
CI – Confidence interval
PD – Periodontal disease
PPD – Probing pocket depth
CAL – Clinical attachment loss
NOS-scale – Newcastle-Ottawa scale
CC – Case control
PD – Probing depth
WMD – Weighed mean difference
Margetts et al. – Margetts BM, Thompson RL, Key T, et al. Development of a scoring system to judge the scientific quality of information from case-control and cohort studies of nutrition and disease. Nutr Cancer 1995;24:231-239
NIH Checklist – The national institute of health checklist

Appendix Table 7. Evidence table on the association between periodontal disease and secondary small for gestational age

AUTHOR (YEAR)	NUMBER OF INCLUDED PRIMARY STUDIES REPORTING ON SGA	TOTAL NUMBER OF PARTICIPANTS	MAIN FINDINGS		METHODOLOGICAL QUALITY ASSESSMENT OF INCLUDED PRIMARY STUDIES (TOOL (MAX SCORE), MEAN SCORE, RANGE)	RISK OF BIAS ASSESSMENT (AMSTAR CHECKLIST, MAX 11)	SUMMARY OF FINDINGS
			RESULTS OF META-ANALYSIS: OR/RR (95%-CI)	RESULTS OF SUBGROUP ANALYSIS: OR/RR (95%-CI)			
Wimmer (2008)	2	2,382	Two studies investigated the association between PD and SGA, of which one found a positive association (RR 2.3 [1.1-4.7]). One study found no association (OR 2.1 [0.8-5.9]).		Not reported	2	Two studies included of which one found a significant association between PD and SGA.

ABBREVATIONS
SGA – Small for gestational age
OR – Odds ratio
RR – Relative risk
CI – Confidence interval
PD – Periodontal disease

Appendix Table 8. Evidence table on the association between periodontal disease and secondary outcome preterm low birth weight

AUTHOR (YEAR)	NUMBER OF INCLUDED PRIMARY STUDIES REPORTING ON PLBW	TOTAL NUMBER OF PARTICIPANTS	MAIN FINDINGS		METHODOLOGICAL QUALITY ASSESSMENT OF INCLUDED PRIMARY STUDIES (TOOL (MAX SCORE), MEAN SCORE, RANGE)	RISK OF BIAS ASSESSMENT (AMSTAR CHECKLIST, MAX 11)	SUMMARY OF FINDINGS
			RESULTS OF META-ANALYSIS: OR/RR (95%-CI)	RESULTS OF SUBGROUP ANALYSIS: OR/RR (95%-CI)			
Chambrone (2011)	5	2,869	RR 3.6 (1.9-6.8)	PD defined by PPD and CAL: RR 2.6 (1.1-6.5) PD defined by CAL alone: RR 11.7 (2.5-54.4) PD defined by PPD alone: RR 3.8 (1.2-12.0)	NOS-scale (max. 14) Mean: 12.2 Range: 10.0-13.0	7	PD showed a significant association with PLBW, which was consistent across different diagnostic criteria for PD.
Corbella (2012b)	3	2,093	OR 3.0 (1.9-4.7)	No subgroup analysis performed	Not reported	6	PD showed a significant association with PLBW.
Corbella (2016)	4	2,263	RR 3.4 (1.3-8.8)	Low risk of bias: RR 6.2 (0.3-117.9) Moderate risk of bias: RR 1.9 (1.5–2.5)	Cochrane Bias Methods Group (max. 5) Mean: 4.5 Range: 4.0-5.0	8	PD showed a significant association with PLBW in the overall analysis. The association was not statistically significant for studies with low risk of bias, likely due to very wide CI.
Ide (2013)	11	4,570	Not reported	CC studies reporting PD as a categorical variable: OR 2.1 (1.3-3.2) CC studies reporting PD as a continuous variable (PD): WMD -0.13 (-0.13, -0.12) CC studies reporting PD as a continuous variable (CAL): WMD 0.07 (-0.01-0.16) CC studies reporting PD as a continuous variable (BOP): WMD -0.08 (-6.4-6.3) Prospective cohort studies reporting PD as a continuous variable (PD): WMD 0.25 (-0.08-0.57) Prospective cohort studies reporting PD as a continuous variable (CAL): WMD 0.3 (-0.003-0.59)	NOS-scale (max. 8) Mean: 5 Range: 4.0-7.0	5	PD showed positive association with PBLW only in CC studies where PD was reported as a categorical variable.

Khader (2005)	2	204	OR 5.3 (2.2-12.6)	No subgroup analysis performed	Margetts et al. (max. 100%) Mean: 60.1 Range: 49.1-71.2	7	PD showed a significant association with PLBW.
Konopka (2012)	22	12,047	OR 2.3 (1.9-2.9)	No subgroup analysis performed	Margetts et al. (max. 100%) Mean score: 49.0 Score range: 29.0-82.0	6	PD showed a significant association with PLBW.
Vergnes (2007)	17	7,151	OR 2.8 (2.0-4.1)	A sensitivity analysis showed that one study significantly deviated from the calculated overall effect. Without this study, the overall OR increased to 3.2 (2.5-4.3)	Margetts et al. (max. 100%) Mean: 54.9 Range: 30.0-82.0	7	PD showed a significant association with PLBW.
Corbella (2012a)	4	1,909	Two out of four studies found a significant positive association between PD and PLBW (OR 1.8-2.6). Two studies found no association.		Not reported	2	Half of the included studies identified a positive association between PD and PLBW.
Madianos (2002)	2	1,379	Both studies showed a positive association between PD and PLBW (OR 4.5-7.9)		Not reported	4	PD showed a significant association with PLBW in two studies.
Oliveira (2009)	9	2,782	Six out of nine studies found a positive association between PD and PLBW (OR/RR 3.0-20.0). Three studies found no association.		Not reported	2	The majority of included studies identified a positive association between PD and PLBW.
Sanchez (2004)	6	1,708	Four out of six studies found a positive association between PD and PLBW (OR/RR 3.5-7.9). Two studies reported no association.		Not reported	**1**	The majority of included studies identified a positive association between PD and PLBW.
Scannapieco (2003)	6	2,880	Five out of six studies reported a positive association between PD and PLBW (OR 2.2-7.9). One study found no association (OR 0.8 [0.7-1.0]).		Newman et al. and Kahn et al. (max. 4) Mean: 3.3 Range: 4-5	5	The majority of included studies identified a positive association between PD and PLBW.
Teshome (2016)	2	686	Both studies reported a significant positive association between PD and PLBW (OR 2.0-3.1).		NIH Checklist Mean: 8.5 Range: 8-9	5	PD showed an association with PLBW in two studies.
Vettore (2006)	13	2,504	6/13 studies reported a positive association between PD an PLBW (OR 3.5-7.9), Seven studies found no association (OR 0.7-3.9)		Not reported	4	A small majority of included studies reported no association between PD and PLBW.
Wimmer (2008)	14	5,501	7/14 reported a positive association between PD and PLBW (OR/RR 3.3-8.9). Seven studies did not find this association		Not reported	2	Half of the included studies identified a positive association between PD and PLBW.

Xiong (2006)	6	2,054	Three out of six studies reported a positive association between PD and PLBW (OR 3.5 to 7.5). Three studies found no association (OR 0.8-1.9).	Not reported	3	Half of the included studies identified a positive association between PD and PLBW.
Xiong (2007)	7	2,105	Three out of seven studies reported a positive association between PD and PLBW (OR/RR 3.5 to 7.5), four studies found no association (OR 0.8-1.9)	Not reported	3	The majority of the studies reported no association between PD and PLBW.

Reviews in which meta-analyses were performed are listed first, followed by reviews in which no meta-analysis was performed.

ABBREVATIONS
PLBW – Preterm low birth weight
OR – Odds ratio
RR – Relative risk
CI – Confidence interval
PD – Periodontal disease
PPD – Probing pocket depth
CAL – Clinical attachment loss
NOS-scale – Newcastle-Ottawa scale
CC – Case control
PD – Probing depth
WMD – Weighed mean difference
BOP – Bleeding on probing
Margetts et al. – Margetts BM, Thompson RL, Key T, et al. Development of a scoring system to judge the scientific quality of information from case-control and cohort studies of nutrition and disease. Nutr Cancer 1995;24:231-239
NIH Checklist – The National Institute of Health Checklist

Appendix Table 9. Citation matrix primary outcome preterm birth

Primary included studies (first author, year)	**Study classification**	**Country where study is conducted**	Chambrone (2011)	Corbella (2012a)	Corbella (2012b)	Corbella (2016)	Ide (2013)	Khader (2005)	Konopka (2012)	Madianos (2002)	Oliveira (2009)	Sanchez (2004)	Teshome (2016)	Vergnes (2007)	Vettore (2006)	Wimmer (2008)	Xiong (2006)	Xiong (2007)
Agueda 2008	Cohort	Spain	x	x	x	x	x		x							x		
AlHabashneh 2012	Cohort	Jordan					x											
Ali 2012	Cohort	Malaysia				x												
Arteaga-Guerra 2010	Cohort	Columbia							x									
Bassini 2007	CC	Brazil									x					x		
Bosjnak 2006	CC	Croatia					x		x		x					x		x
Castaldi 2006	Cohort	Argentina																x
Dasanayake 2001	CC	USA						x										
Davenport 2002	CC	UK																x
Dortbudak 2005	Cohort	Austria		x												x	x	x
Farrell 2006	Cohort	UK														x		x
Fraser 2004	CC	Canada															x	
Gianella 2011	CC	Italy					x											
Glesse 2004	CC	Brazil												x				

Goepfert 2004	CC	USA		x	x	x			x		x			x	x	x	x	x
Grandi 2010	CC	Argentina											x					
Guimaraes 2010	Cohort	Brazil			x	x	x											
Hasegawa 2003	CC	Japan													x			
Heimonen 2009	CC	Finland		x			x											
Holbrook 2004	Cohort	Iceland		x											x	x	x	x
Iwanaga 2011	CC	Japan					x											
Jarjoura 2005	CC	USA		x	x	x	x				x			x	x	x	x	x
Jeffcoat 2001	Cohort	USA	x	x				x	x	x	x	x		x	x	x	x	x
Khader 2009	CC	Jordan		x														
Konopka 2003	CC	Poland												x				
Kukkamal 2014	CC	India											x					
Le 2007	CC	Thailand					x											
Lin 2007	CC	USA		x														
Lopez 2002a	Cohort	Chile		x												x		
Lopez 2002b	CC	Chile						x									x	x
Lunardelli 2005	CS	Brazil					x							x	x			x
Macedo 2014	CC	Brazil				x												
Madianos 2001	Cohort	USA		x											x			
Mannem 2011	CC	India											x					
Marin 2005	CS	Brazil			x	x								x	x			
Meurman 2006	Cohort	Finland														x		
Mobeen 2008	Cohort	Pakistan		x														
Moliterno 2005	CC	Brazil							x					x				
Moore 2004a	Cohort	UK	x	x			x							x	x		x	x
Moore 2004b	CC	UK													x	x		
Moore 2005	CC	UK		x			x				x				x	x	x	x

Moreu 2005	Cohort	Spain									x				x	x		x
Mumghamba	CC	Tanzania											x					
Nabet 2010	CC	France			x	x	x											
Noack 2005	CC	Germany												x				
Offenbacher 1996	CC	USA		x				x						x				
Offenbacher 2001	Cohort	USA	x	x							x					x	x	x
Offenbacher 2006	Cohort	USA	x		x	x	x				x					x		x
Oittinen 2005	Cohort	Finland														x		
Piscoya 2012	CC	Brazil					x											
Pitiphat 2008	Cohort	USA	x	x												x		
Radnai 2004	CC	Hungary		x	x	x										x	x	x
Radnai 2006	CC	Hungary		x	x	x	x				x					x		x
Rajapakse 2004	Cohort	Sri Lanka		x					x									
Rajapakse 2005	Cohort	Sri Lanka												x		x		
Rakoto-Alson 2010	Cohort	Madagascar	x		x	x	x											
Romero 2002	Cohort	Venezuela		x												x		
Ryu 2010	CC	Korea			x	x												
Saddki 2008	Cohort	Malaysia																
Sanchez 2007	Cohort	USA														x		
Santa Cruz 2013	Cohort	Spain				x												
Santos-Pereira 2007	Cohort	Brazil					x				x					x		
Sharma 2007	Cohort	Fiji		x														
Siqueira (Mafra) 2007	CC	Brazil		x	x	x	x											
Skuldbol 2006	CC	Denmark														x		x
Srinivas 2009	Cohort	USA	x	x			x											
Toygar 2007	Cohort	Turkey					x									x		
Vettore 2008	CC	Brazil					x									x		

Vogt 2010	Cohort	Brazil			x	x	x											
Wood 2006	CC	Canada		x	x	x	x									x		x

ABBREVIATIONS
CC – Case control
USA – United States of America
UK – United Kingdom
CS – Cross sectional

Appendix Table 10. Citation matrix secondary outcome preeclampsia

Primary included study (first author, year)	**Study classification**	**Country where study is conducted**	Conde-Agudelo (2008)	Huang (2014)	Ide (2013)	Rustveld (2008)	Kunnen (2010)	Sgolastra (2013)	Wei (2013)	Xiong (2006)	Xiong (2007)
Barak 2007	CC	Israël	x								
Boggess 2003	Cohort	USA	x	x	x	x	x	x	x	x	x
Canakci 2004	CC	Turkey	x	x	x	x	x	x	x	x	x
Canakci 2007	CC	Turkey					x	x	x		
Castaldi 2006	Cohort	Argentina	x				x		x		x
Chaparro 2012	CC	Chile						x			
Contreras 2006	CC	Colombia	x	x	x	x	x		x		x
Cota 2006	CC	Brazil	x						x		
Ha 2011	CC	Korea		x				x	x		
Khader 2006	CC	Jordan	x		x		x				
Kumar 2013	Cohort	India		x				x			
Kunnen 2007	CC	Netherlands	x				x	x	x		
Lohsoonthorn 2009	CC	Thailand		x			x	x	x		
Moura da Silva 2012	CC	Brazil		x				x	x		
Nabet 2010	CC	France			x		x				

Oettinger-Barak 2005	CC	Israel	x								x
Politano 2011	CC	Brazil		x				x	x		
Sayar 2011	CC	Iran							x		
Shetty 2010	CC	India		x			x	x	x		
Siqueira 2008	CC	Brazil		x	x		x	x	x		
Srinivas 2009	Cohort	USA					x	x			
Taghzouti 2012	CC	Canada		x	x			x	x		
Wang 2012	CC	Japan						x			

ABBREVIATIONS
CC – Case control
USA – United States of America

Appendix Table 11. Citation matrix secondary outcome low birth weight

Primary included study (first author, year)	**Study classification**	**Country where study was conducted**	Chambrone (2011)	Corbella (2012a)	Corbella (2012b)	Corbella (2016)	Ide (2013)	Konopka (2012)	Madianos (2002)	Oliveira (2009)	Sanchez (2004)	Scannapieco (2003)	Teshome (2016)	Vergnes (2007)	Vettore (2006)	Wimmer (2008)	Xiong (2006)	Xiong (2007)
Agueda 2008	Cohort	Spain	x		x	x	x									x		
Ahmed Haerian 2013	CC	Iran											x					
AlHabashneh 2012	Cohort	Jordan					x											
Ali 2012	Cohort	Malaysia				x												
Bassani 2007	CC	Brazil					x	x		x								
Boggess 2006	Cohort	USA					x											
Castaldi 2006	Cohort	Argentina																x
Cisse 2015	CC	Senegal											x					
Cruz 2005	CC	Brazil											x		x			x
Cruz 2009	CC	Brazil			x	x	x											
Dasanayake 1998	CC	USA							x	x	x	x			x	x	x	x
Dasanayake 2001	CC	USA									x	x			x	x		
Dortbudak 2005	Cohort	Austria		x														
Farrell 2006	Cohort	UK					x									x		x
Gomes-Fihlo 2006	CC	Brazil					x											

Guimaraes 2012	CS	Brazil				x												
Jarjoura 2005	CC	USA						x		x				x	x		x	x
Konopka 2003	CC	Poland												x				
Kukkamal 2014	CC	India											x					
Lopez 2002b	CC	Chile									x					x	x	x
Louro 2001	CC	Brazil												x	x		x	x
Lunardelli 2005	CS	Brazil					x							x	x	x		x
Marin 2005	CS	Brazil			x	x	x			x				x		x		
Meurman 2006	Cohort	Finland														x		
Moliterno 2005	CC	Brazil								x			x	x				x
Moore 2004	Cohort	UK	x	x				x						x	x	x	x	x
Moore 2005	CC	UK					x											
Moreu 2005	Cohort	Spain								x					x	x		x
Mumghamba 2007	CC	Tanzania			x	x												
Noack 2005	CC	Germany												x				
Oettinger-Barak 2005	CC	Israel																
Offenbacher 1996	CC	USA												x				
Offenbacher 2001	Cohort	USA	x	x												x	x	x
Radnai 2004	CC	Hungary												x				
Radnai 2006	CC	Hungary		x						x						x		
Rajapakse 2005	Cohort	Sri Lanka		x										x		x		
Rakoto-Alson 2010	Cohort	Madagascar	x		x	x	x											
Romero 2002	Cohort	Venezuela										x				x		
Saddki 2007	Cohort	Malaysia	x				x											
Sanchez 2007	Cohort	USA														x		
Santa Cruz 2013	Cohort	Spain				x												
Santos-Pereira 2007	Cohort	Brazil								x						x		

Sembene 2000	CC	France													x		x	x
Siqueira 2007	CC	Brazil			x	x	x	x										
Srinivas 2009	Cohort	USA					x											
Toygar 2007	CS	Turkey					x									x		
Vettore 2008	CC	Brazil					x									x		
Vogt 2010	Cohort	Brazil			x	x	x											

ABBREVIATIONS
CC – Case control
USA – United States of America
UK – United Kingdom
CS – Cross sectional

Appendix Table 12. Citation matrix secondary outcome preterm low birth weight

Primary included study (first author, year)	**Study classification**	**Country where study is conducted**	Chambrone (2011)	Corbella (2012a)	Corbella (2012b)	Corbella (2016)	Ide (2013)	Khader (2005)	Konopka (2012)	Madianos (2002)	Oliveira (2009)	Sanchez (2004)	Scannapieco 2003	Teshome (2016)	Vergnes (2007)	Vettore (2006)	Wimmer (2008)
Aerleaga-Guerra 2010	Cohort	Colombia							x								
Agueda 2008	Cohort	Spain	x	x	x	x	x		x								x
Alves, Ribeiro 2006	CC	Brazil															x
Bassani 2007	CC	Brazil							x								x
Betleja 2004	CC	Poland							x								
Bosnjak 2006	CC	Croatia							x								
Budunelli 2005	CC	Turkey					x									x	x
Cardoso 1999	CC	Brazil														x	
Carta 2004	CC	Italy														x	
Dasanayake 2001	CC	USA						x									
Davenport 1998	CC	UK									x						
Davenport 2002	CC	UK					x				x	x	x			x	x
Dortbudak 2005	Cohort	Austria							x		x				x	x	
Ercan 2012	Cohort	Turkey					x										
Gazolla 2007	Cohort	Brazil															x

Glesse 2004	CC	Brazil													x		
Goepfert 2004	CC	USA							x						x		
Gomes Filho 2006	CC	Brazil					x		x								x
Jarjoura 2005	CC	USA							x						x		
Jeffcoat 2001	Cohort	USA							x				x		x		
Khader 2009	CC	Jordan		x			x		x					x			
Konopka 2003	CC	Poland							x						x	x	x
Lopez 2002a	Cohort	Chile										x					
Lopez 2002b	CC	Chile			x	x			x		x	x					
Louro 2001	CC	Brazil													x		
Lunardelli 2005	CS	Brazil							x						x	x	
Madianos 2001	CS	USA											x				
Marakoglu 2008	CC	Turkey							x								
Marin 2005	CS	Brazil													x		
Mitchell-Lewis 2001	Cohort	USA									x	x				x	x
Mokeem 2004	CC	Saudi-Arabia									x				x	x	x
Moliterno 2005	CC	Brazil							x						x	x	x
Moore 2004a	Cohort	UK							x						x		
Moore 2005	CC	UK		x													
Mumghamba 2007	CC	Tanzania					x										
Noack 2005	CC	Germany					x		x		x				x	x	x
Offenbacher 1996	CC	USA					x	x	x	x	x	x	x		x	x	x
Offenbacher 1998	CC	USA								x		x	x			x	
Offenbacher 2001	Cohort	USA											x				
Radnai 2004	CC	Hungary													x		
Radnai 2006	CC	Hungary							x		x						
Rajapakse 2005	Cohort	Sri Lanka	x	x					x						x		

Rakoto-Alson 2010	Cohort	Madagascar	x		x	x	x										
Robles 2004	CC	Peru													x		
Saddki 2008	Cohort	Malaysia	x														
Santa Cruz 2013	Cohort	Spain				x											
Sharma 2007	Cohort	Fiji	x														
Siqueira 2007	CC	Brazil							x								
Smitha 2013	CC	India												x			
Toygar 2007	CC	Turkey															
Vettore 2008	CC	Brazil					x										x

ABBREVIATIONS
CC – Case control
USA – United States of America
UK – United Kingdom
CS – Cross sectional