

# Antenatal care

routine care for the  
healthy pregnant woman

**Clinical Guideline**

**March 2008**

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healthy pregnant woman

2008 update

National Collaborating Centre for Women's  
and Children's Health

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## **Excluded studies**

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### 3 Woman-centred care and informed decision-making

#### 3.2 Provision of information

**Clinical question:** What, how and when information should be offered during the antenatal period to inform women's decisions about care during pregnancy, labour, birth and the postnatal period?

Bibliographic reference	Reason for exclusion
Lavender T Campbell E Thompson S et al Supplying women with evidence-based information. <i>Foundation of Nursing Studies Dissemination Series</i> . 2003; 2(4): 1-4.	Audit
Ludowese C Marini T Laxova R et al Evaluation of the effectiveness of a teratogen information service: a survey of patient and professional satisfaction. <i>Teratology</i> . 1993; 48: 233-245.	Specialist service – not included as an example topic area.
McLeod D Benn C Pullon S et al The midwife's role in facilitating smoking behaviour change during pregnancy. <i>Midwifery</i> . 2003; 19: 285-297.	Small (n = 11), retrospective study.
Arborelius E and Nyberg K How should midwives discuss smoking behaviour in pregnancy with women of low educational attainment? <i>Midwifery</i> . 1997; 13: 210-215.	Small (n = 13), retrospective study.
Lumley J and Donohue L Aiming to increase birthweight: a randomized trial of pre-pregnancy information, advice and counseling in inner-urban Melbourne. <i>BMC Public Health</i> . 2006; 6: 299-310.	Wrong population – pre-pregnancy.
Hauck Y and Dimmock J Evaluation of an information booklet on breastfeeding duration: a clinical trial. <i>Journal of Advanced Nursing</i> . 1994; 20: 836-843.	Wrong population – postnatal.
Labarere J Bellin V Fourny M et al Assessment of a structured in-hospital educational intervention addressing breastfeeding: a prospective randomized open trial. <i>BJOG: an International Journal of Obstetrics and Gynaecology</i> . 2003; 110: 847-852.	Wrong population – postnatal.
Koehn M Childbirth education outcomes: an integrative review of the literature. <i>The Journal of Perinatal Education</i> . 2002; 11(3): 10-18.	Non-systematic review (no quality appraisal of included studies)
Broome M and Koehler Childbirth education: a review of effects on the woman and her family. <i>Family and Community Health</i> . 1986; 9(1): 33-44.	Non-systematic review.
Turner R Receiving recommended prenatal health advice can increase birthweight. <i>Family Planning Perspectives</i> . 1994; 26(4): 187-189.	Poor methodology – retrospective association with no controlling for confounding factors.
Rautava P Erkkola R and Sillanpaa M The Finnish Family Competence Study: new directions are necessary in antenatal education. <i>Health Education Research</i> . 1990; 5(3): 353-359.	Not relevant to current UK practice.
O'Meara C An evaluation of consumer perspectives of childbirth and parenting education. <i>Midwifery</i> . 1993; 9: 210-219.	Poor methodology leading to high degree of bias.
Callaghan L Jones J and Leonard L Evaluation of a childbirth and parenting education service. <i>Birth Issues</i> . 2001; 10(2): 41-49.	Poor methodology leading to high degree of bias.
Qureshi N Schofield G Papaioannou S et al Parentcraft classes: do they affect outcome in childbirth? <i>Journal of Obstetrics and Gynaecology</i> . 1996; 16: 358-361.	Poor methodology with no controlling for confounding factors.

## 4 Provision and organisation of care

### 4.6 Gestational age assessment

**Clinical question:** What is the diagnostic value and effectiveness of screening methods in determining gestational age?

Bibliographic Information	Reason for exclusion
Authors: Doubilet PM;. Title: Improved prediction of gestational age in the late third trimester. Journal Name: Journal of Ultrasound in Medicine. Year: 1993 Nov	It does not answer the clinical question.
Authors: Egley CC;. Title: Femur length versus biparietal diameter for estimating gestational age in the third trimester. Journal Name: American Journal of Perinatology. Year: 1986 Apr	It does not test the diagnostic value/ effectiveness of the test under study.
Authors: Feresu SA;. Title: Improving the assessment of gestational age in a Zimbabwean population. Journal Name: International Journal of Gynecology and Obstetrics. Year: 2002	It does not test the diagnostic value/ effectiveness of the test under study.
Authors: Feresu SA;. Title: Birthweight-adjusted Dubowitz methods: reducing misclassification of assessments of gestational age in a Zimbabwean population. Journal Name: Central African Journal of Medicine. Year: 2003 May	It does not test the diagnostic value/ effectiveness of the test under study.
Authors: Feresu SA;. Title: Does the modified Ballard method of assessing gestational age perform well in a Zimbabwean population?. Journal Name: Central African Journal of Medicine. Year: 2003 Sep	Test is not relevant.
Authors: Gardosi J;. Title: Gestational age and induction of labour for prolonged pregnancy. Journal Name: British Journal of Obstetrics and Gynaecology. Year: 1997	It does not help answer the clinical question.
Authors: Geirsson RT;. Title: Certain dates may not provide a reliable estimate of gestational age. Journal Name: British Journal of Obstetrics and Gynaecology. Year: 1991 Jan	It does not test the diagnostic value/ effectiveness of the test under study.
Authors: Geirsson RT;. Title: Ultrasound: The rational way to determine gestational age. Journal Name: Fetal and Maternal Medicine Review. Year: 1997	It does not help answer the clinical question.
Authors: Hadlock FP;. Title: The use of ultrasound to determine fetal age. A review. Journal Name: Medical Ultrasound. Year: 1983	A review study not a systematic one.
Authors: Hadlock FP;. Title: Estimating fetal age using multiple parameters: a prospective evaluation in a racially mixed population. Journal Name: American Journal of Obstetrics and Gynecology. Year: 1987 Apr	It does not help answer the clinical question.
Authors: Hadlock FP;. Title: Fetal crown-rump length: reevaluation of relation to menstrual age (5-18 weeks) with high-resolution real-time US. Journal Name: Radiology. Year: 1992 Feb	It does not help answer the clinical question.
Authors: Hadlock F;. Title: Fetal abdominal circumference as a predictor of menstrual age. Journal Name: American Journal of Roentgenology. Year: 1982	It does not help answer the clinical question.
Authors: Harada T;. Title: The new fetal crown-rump length dating curve, and the accuracy of gestational age estimation. Journal Name: Japanese Journal of Medical Ultrasonics. Year: 1990	It does not help answer the clinical question.
Authors: Harrington DJ;. Title: Does a first trimester dating scan using crown rump length measurement reduce the rate of induction of labour for prolonged pregnancy? An uncompleted randomised controlled trial of 463 women.. Journal Name: BJOG: an International Journal of Obstetrics and Gynaecology. Year: 2006 Feb	It does not help answer the clinical question.

Bibliographic Information	Reason for exclusion
Authors: Hern WM;. Title: Correlation of fetal age and measurements between 10 and 26 weeks of gestation. Journal Name: Obstetrics and Gynecology. Year: 1984 Jan	It does not help answer the clinical question.
Authors: Hohler CW;. Title: Ultrasound estimation of gestational age. Journal Name: Clinical Obstetrics and Gynecology. Year: 1984	It does not help answer the clinical question.
Authors: Hutchon DJR;. Title: 'Expert' analysis of menstrual and ultrasound data in pregnancy - Gestational dating. Journal Name: Journal of Obstetrics and Gynaecology. Year: 1998	It does not help answer the clinical question.
Authors: Kurtz AB;. Title: Accurate ultrasound evaluation of fetal age. Journal Name: Perinatology Neonatology. Year: 1981	Review paper not systematic one.
Authors: MacGregor SN;. Title: Underestimation of gestational age by conventional crown-rump length dating curves. Journal Name: Obstetrics and Gynecology. Year: 1987 Sep	It does not help answer the clinical question.
Authors: Nichols M;. Title: Comparing bimanual pelvic examination to ultrasound measurement for assessment of gestational age in the first trimester of pregnancy. Journal Name: Journal of Reproductive Medicine. Year: 2002 Oct	It does not give us enough information to calculate the diagnostic value of the test under study.
Authors: Okupe RF;. Title: Assessment of fetal biparietal diameter during normal pregnancy by ultrasound in Nigerian women. Journal Name: British Journal of Obstetrics and Gynaecology. Year: 1984 Jul	It does not give enough information to calculate the diagnostic value of the test under study.
Authors: Osinusi BO;. Title: Ultrasonic foetal head circumference as a means of assessing gestational age in Nigerians. Journal Name: West African Journal of Medicine. Year: 1990 Jan	It does not give enough information to calculate the diagnostic value of the test under study.
Authors: Persson PH;. Title: Reliability of ultrasound fetometry in estimating gestational age in the second trimester. Journal Name: Acta Obstetrica et Gynecologica Scandinavica. Year: 1986	It does not give enough information to calculate the diagnostic value of the test under study.
Authors: Silva PD;. Title: Early crown-rump length. A good predictor of gestational age. Journal Name: Journal of Reproductive Medicine. Year: 1990 Jun	It does not give enough information to calculate the diagnostic value of the test under study.
Authors: Verhoeff FH;. Title: Gestational age assessment by nurses in a developing country using the Ballard method, external criteria only. Journal Name: Annals of Tropical Paediatrics. Year: 1997 Dec	The test is no longer used.
Authors: Alexandrescu G;. Title: Conception date estimation: Gestational age evaluation. Journal Name: Romanian Journal of Legal Medicine. Year: 2000	It does not give enough information to calculate the diagnostic value of the test under study.
Authors: Bowie JD;. Title: Estimating gestational age in utero.. Journal Name: Radiologic Clinics of North America. Year: 1982 Jun	It does not give enough information to calculate the diagnostic value of the test under study.
Authors: Daya S;. Title: Accuracy of gestational age estimation by means of fetal crown-rump length measurement. Journal Name: American Journal of Obstetrics and Gynecology. Year: 1993 Mar	It does not give enough information to calculate the diagnostic value of the test under study.



## 5 Lifestyle considerations

### 5.12.1 Alcohol and smoking in pregnancy

**Clinical question:** What is the minimum level of alcohol intake associated with fetal alcohol syndrome and other baby outcomes?

Bibliographic reference	Reason for exclusion
Authors: Alati R; Title: In utero alcohol exposure and prediction of alcohol disorders in early adulthood: A birth cohort study. Journal Name: Archives of General Psychiatry. Year: 2006	It does not answer the clinical question.
Authors: Alvik A; Title: Alcohol use before and during pregnancy: a population-based study. Journal Name: Acta Obstetrica et Gynecologica Scandinavica. Year: 2006	It does not answer the clinical question.
Authors: Aros S; Title: Prospective identification of pregnant women drinking four or more standard drinks (> or = 48 g) of alcohol per day. Journal Name: Substance Use and Misuse. Year: 2006	It does not answer the clinical question.
Authors: Barr HM; Title: Binge drinking during pregnancy as a predictor of psychiatric disorders on the Structured Clinical Interview for DSM-IV in young adult offspring. Journal Name: American Journal of Psychiatry. Year: 2006 Jun	It does not answer the clinical question.
Authors: Burns L; Title: Use of record linkage to examine alcohol use in pregnancy. Journal Name: Alcoholism: Clinical and Experimental Research. Year: 2006 Apr	It does not answer the clinical question.
Authors: Caetano R; Title: The epidemiology of drinking among women of child-bearing age. Journal Name: Alcoholism: Clinical and Experimental Research. Year: 2006	It does not answer the clinical question.
Authors: Chiaffarino F; Title: Alcohol drinking and risk of small for gestational age birth. Journal Name: European Journal of Clinical Nutrition. Year: 2006 Sep	It does not answer the clinical question.
Authors: Foster RK; Title: Alcohol consumption in the new millennium - Weighing up the risks and benefits for our health. Journal Name: Nutrition Bulletin. Year: 2006	It does not answer the clinical question.
Authors: King D; Title: Statistics. Alcohol consumption during pregnancy. Journal Name: International Journal of Childbirth Education. Year: 2006	It does not answer the clinical question.
Authors: O'Connor MJ; Title: The relationship of prenatal alcohol exposure and the postnatal environment to child depressive symptoms. Journal Name: Journal of Pediatric Psychology. Year: 2006 Jan	It does not answer the clinical question.
Authors: Rayburn WF; Title: Beer consumption among hazardous drinkers during pregnancy. Journal Name: Obstetrics and Gynecology. Year: 2006 Feb	It does not answer the clinical question.
Authors: Whitehall JS; Title: National guidelines on alcohol use during pregnancy: a dissenting opinion.. Journal Name: Medical Journal of Australia. Year: 2007 Jan 1	It does not answer the clinical question.

## 8 Screening for haematological problems

### 8.3.3 Thalassaemia screening

**Clinical question:** What is the diagnostic value and effectiveness of the following screening methods in identifying clinically significant thalassaemia and thalassaemia carrier status (trait): history; family origin, full blood count; Hb electrophoresis; ferritin; mean cell volume?

Bibliographic reference	Reason for exclusion
Small K and Chan F. Antenatal screening and prenatal diagnosis of thalassaemia: an update. <i>Medical Journal of Australia</i> . 1998; 169: 215-219.	Non-research article.
Lewis D Stockley R and Chanarin I. Changes in the mean corpuscular red cell volume in women with beta-thalassaemia trait during pregnancy. <i>British Journal of Haematology</i> . 1982; 50: 423-425.	Not screening.
Lee A Ha S Wong K et al Prevention of beta-thalassaemia major by antenatal screening in Hong Kong. <i>Pediatric Hematology and Oncology</i> . 1998; 15: 249-254.	Descriptive article.
Young K Wadsworth L Langlois S et al Thalassaemia carrier screening and prenatal diagnosis among the British Columbia (Canada) population of Chinese descent. 1999; 55: 20-25.	Descriptive article.
Ahmed S Green J and Hewison J What are Pakistani women's experiences of antenatal carrier screening for beta-thalassaemia in the UK? Why is it difficult to answer this question? <i>Public Health</i> . 2002; 116: 297-299.	Descriptive article.
Yeo G Tan K and Liu T The role of discriminant functions in screening for beta-thalassaemia traits during pregnancy. <i>Singapore Medical Journal</i> . 1995; 36: 615-618.	Does not address diagnostic accuracy or effectiveness of antenatal screening.
Yeo G Tan K and Liu T Screening for beta-thalassaemia and HbE traits with the mean red cell volume in pregnant women. <i>Beta-thalassaemia and HbE disease</i> . 1994; 23 (3): 363-366.	Descriptive study, does not report accuracy.
Sin S Ghosh A and Can V Ten year's experience of antenatal mean corpuscular volume screening and prenatal diagnosis for thalassaemias in Hong Kong. <i>Journal of Obstetrics and Gynaecology Research</i> . 2000; 26(3): 203-208.	Descriptive study, does not report accuracy.
Matthews R and Malios J Thalassaemia – a preventive approach. <i>Medical Journal of Australia</i> . 1976; 2: 8-10.	Descriptive study.
Smith M Whiteside M and Campbell D The occurrence of heterozygous beta-thalassaemia as screened by quantitative haemoglobin electrophoresis in pregnancy. 1971; June: 1273-1274.	Descriptive study.
Alter B Coupal E and Forget B Globin chain electrophoresis for prenatal diagnosis of beta-thalassaemia. 1981; 5 (4): 357-370.	2004;
Angastiniotis M Kyriakidou S and Hadjiminis The Cyprus Thalassaemia Control Program. 1988. <i>Birth Defects</i> ; 23 (5B): 417-432.	Non-pregnant population.
Angastiniotis M and Hadjimina M Prevention of thalassaemia in Cyprus. <i>The Lancet</i> . 1981; February 14: 369-370.	Whole population screening.
Cao A Pintus L Lecca U et al Control of homozygous beta-thalassaemia by carrier screening and antenatal diagnosis in Sardinians. 1984; 26: 12-22.	Whole population screening.
Cao A Results of programmes for antenatal detection of thalassaemia in reducing the incidence of the disorder. <i>Blood reviews</i> . 1987; 1: 169-176.	Whole population screening.
Chareonkul P Kraisin J Prevention and control of thalassaemia at Saraburo Regional Hospital. <i>Journal of the Medical Association of Thailand</i> . 2004; 87(1): 8-14.	Descriptive study

Bibliographic reference	Reason for exclusion
Rossa W Lau T Leung T et al Prenatal exclusion of beta thalassaemia major by examination of maternal plasma. The Lancet. 2002; 360: 998-1000.	Diagnosis rather than screening.
Gehlbach D and Morgenstern L Antenatal screening for thalassaemia minor. 1988; 71 (5): 801-803.	Descriptive study
Modell B Khan M Darlison M et al A national register for surveillance of inherited disorders: beta thalassaemia in the United Kingdom. Bulletin of the World Health Organisation. 2001; 79 (11): 1006-1013.	Descriptive study, does not report accuracy.
Modell B Harris R Lane B et al Informed choice in genetic screening for thalassaemia during pregnancy: audit from a national confidential inquiry. British Medical Journal. 2000; 320: 337-341.	Descriptive only, no details of women's views or experiences.
Petrou M Modell B Shetty S et al Long-term effect of prospective detection of high genetic risk on couples' reproductive life: data for thalassaemia. Prenatal diagnosis. 2000; 20: 469-474.	Descriptive only, no details of women's views or experiences.
Ravindran M Patel Z Khatkhatay et al Beta-thalassaemia carrier detection by ELISA: A simple screening strategy for developing countries. Journal of Clinical Laboratory Analysis. 2005; 19: 22-25.	Laboratory testing method – not relevant to UK setting.
Winichagoon P Thitivichianlert A Lebnak T et al Screening for the carriers of thalassaemias and abnormal hemoglobin at the community level. Southeast Asian Journal of Tropical Medicine and Public Health. 2002; 33 (Suppl. 2): 145-150.	Whole population screening.
Mehta B Nestcroft: A screening test for beta-thalassaemia trait. Science Technology and Innovation. 2002; 56(11): 537-545.	Laboratory testing method – not relevant to UK setting.
Bencaiova G Burkhardt T Krafft et al Screening for beta-thalassaemia trait in anaemic pregnant women. Gynecologic and Obstetric Intervention. 2006; 62: 20-27.	Population outside scope (anaemic women).
Alger L Golbus M & Laros R Thalassaemia and pregnancy: Results of an antenatal screening program. American Journal of Obstetrics and Gynaecology. 1979; 134: 662-672.	Describes uptake of screening programme and prevalence of thalassaemia.

### 8.3.4 Sickle cell disease/sickle cell carrier status

**Clinical question:** What is the diagnostic value and effectiveness of the following screening methods in identifying clinically important genotypes of sickle cell disease and sickle cell carrier status (trait) including: history taking; family origin; full blood count: Hb electrophoresis; ferritin; mean cell volume; high performance liquid chromatography; sickle solubility testing (SickleDEX)?

Bibliographic reference	Reason for exclusion
Rowley T, Fisher L & Lipkin M. Incorporation of screening and genetic counseling for beta-thalassemia trait into primary health care: effects on knowledge and attitudes. Birth Defects Original Article Series 1982; 18(7): 231-241.	Whole population screening.
Sirichotiyakul S, Tongprasert F & Tongsong T. Screening for hemoglobin E trait in pregnant women. International Journal of Gyn and Obs. 2004; 86: 390-391.	Not sickle disease.
Rooks Y. Screening the mother during early pregnancy. American Academy of Paediatrics. 1989; Supplement: 884-885.	Description of screening programme – no accuracy or effectiveness data.
Hamdi I, Kamakshi K & Ghani E. Pregnancy outcome in women with sickle cell trait. Saudi Medical journal. 2002; 23(12): 1455-1457.	Does not provide data relating to screening.
Farfel M & Holtzman N. Education, consent, and counseling in sickle cell screening programs: report of a survey. American Journal of Public Health. 1984; 74(4): 373-375.	Survey of US practice
Jeremiah Z. An assessment of the clinical utility of routine antenatal screening of pregnant women at first clinic attendance for haemoglobin genotypes, haematocrit, ABO and Rh blood groups in Port Harcourt, Nigeria. African Journal of Reproductive Health. 2005; 9(3): 112-117.	Descriptive study of prevalence.
McCurdy P. Screening for abnormal hemoglobins. Primary Care. 1980; 7(3): 451-460.	Non-research article
Schmidt R, Brosious E, Holland S et al. Use of blood specimens collected on filter paper in screening for abnormal hemoglobins. Clinical Chemistry. 1976; 22(5): 685-687.	System not applicable to UK practice.
Jones S, Shickle A, Goldstein R et al. Acceptability of antenatal diagnosis for sickle-cell disease among Jamaican mothers and female patients. West Indies Medical Journal. 1988; 37:12-15.	Diagnosis rather than screening.
Miller J. Sickle cell trait in pregnancy. Southern Medical Journal. 1983; 76(8): 962-963.	Non-research article.
Granda H, Gispert S, Dorticos A et al. Cuban programme for prevention of sickle cell disease. Lancet. 1991; 337: 152-153.	Description of uptake of screening programme only.
Eboh W & Van der Akker O. Antenatal screening for couples at risk of having children with sickle cell disorders. Midwives. 1997; 110(1309): 26-27.	Non-research article
Lutcher C, Huisman T, Dorsey W et al. The Role of a sickle cell center in comprehensive screening and counseling for sickle cell and related disorders. Southern Medical Journal. 1974; 67(3): 259-264.	Descriptive study only.
Davies S & Oni L. Sickle cell disease screening programmes. Disease Management Health Outcomes. 2001; 9(6): 295-304.	Non-research article.
Wang X, Seaman c, Paik M et al. Experience with 500 prenatal diagnoses of sickle cell diseases: the effect of gestational age on affected pregnancy outcomes. 1994; 14: 851-857.	Diagnosis rather than screening.
Aspinall P, Dyson S & Anionwu E. The feasibility of using ethnicity as a primary tool for antenatal selective screening for sickle cell disorders: pointers from the research evidence. Social Science and Medicine. 2003; 56: 285-297.	Non-systematic review.
Petrou M, Brugiattelli M, Ward R et al. Factors affecting the uptake of prenatal diagnosis for sickle cell disease. Journal of Medical Genetics. 1992; 29: 820-823.	Diagnosis rather than screening.

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<b>Bibliographic reference</b>	<b>Reason for exclusion</b>
De Montalembert M, Guilloud-Bataille M, Ducros A et al Implications of prenatal diagnosis of sickle cell disease. Genetic Counselling. 1996; 7 (1): 9-15.	Diagnosis rather than screening.
Brock D Effectiveness of pre-natal screening. Birth Defects. 1982; 18(3A); 109-120.	Non-research
Rowley P, Loader S, Sutera C Prenatal Screening for hemoglobinopathies. 1. A prospective regional trial. 1991. 48: 439-446.	Description of screening uptake.

## 8.3.5 Joint screening for sickle cell disease and thalassaemia

Bibliographic reference	Reason for exclusion
Wild B & Bain B Detection and quantitation of normal and variant haemoglobins: an analytical review. <i>The Association of Clinical Biochemists</i> . 2004; 41: 355-369.	Non-research article.
Waye J Eng B Cai S Carrier detection and prenatal diagnosis of haemoglobinopathies in Ontario. <i>Clinical Investigative Medicine</i> . 1993; 16(5): 358-371.	Diagnosis rather than screening.
Schoen E Marks S Moore Clemons M et al Comparing prenatals and neonatal diagnosis of haemoglobinopathies. <i>Pediatrics</i> . 1993; 92(3): 354-357.	Description of screening uptake and prevalence.
Stein J Berg C Jones J et al A screening protocol for a prenatal population at risk for inherited hemoglobin disorders: results of its application to a group of Southeast Asians and blacks. <i>American Journal of Obstetrics and Gynecology</i> . 1984; 150 (4): 333-341.	Description of screening uptake and prevalence.
Bain B & Chapman C A survey of current United Kingdom practice for antenatal screening for inherited disorders of globin chain synthesis. <i>Journal of Clinical Pathology</i> . 1998; 51: 382-389.	Descriptive article.
Cao A Galanello R & Rosatelli Prenatal diagnosis and screening of the haemoglobinopathies. <i>Bailliere's Clinical Haematology</i> . 1998; 11(1): 215-238.	Whole population screening.
Arora S Kabra M Maheshwari M Prenatal diagnosis of haemoglobinopathies. <i>The National Medical Journal of India</i> . 2001; 14(6): 340-342.	Diagnosis rather than screening.
Daniel Y Turner C Haynes R Rapid and specific detection of clinically significant haemoglobinopathies using electrospray mass spectrometry-mass spectrometry. <i>British Journal of Haematology</i> . 2005; 130: 635-643.	Laboratory technique relating to neonatal screening.
Streetly A & Dick M Screening for haemoglobinopathies. <i>Current paediatrics</i> . 2005; 15: 32-39.	Descriptive article.
Cao A & Rosatelli M Screening and prenatal diagnosis of the haemoglobinopathies. <i>Balliere's Clinical Haematology</i> . 1993; 6(1): 263-286.	Non-research article.
Streetly A Screening for major haemoglobinopathies. <i>Midwives</i> . 2005; 8(2): 62-63.	Descriptive article – UK prevalence.
Bentley D Cavill I Choiseul M et al Haemoglobinopathy screening in a "low-risk" area of the United Kingdom: South Glamorgan, Wales. <i>Acta Haematologica</i> . 1987; 78: 149-153.	Descriptive article – UK prevalence.
Sanchaisuriya K Fucharoen S Fucharoen G et al A reliable screening protocol for thalassaemia and haemoglobinopathies in pregnancy. <i>American Journal of Clinical Pathology</i> . 2005; 123: 113-118.	Not relevant to UK population
Kadkhodaei M Elyaderani Cintkotai K Ethnicity study and non-selective screening for haemoglobinopathies in the antenatal population of central Manchester. <i>Clinical Laboratory Haematology</i> . 1998; 20: 207-211.	Descriptive article – UK prevalence.
Atkin K Ahmad W & Anionwu E Screening and counseling for sickle cell disorders and thalassaemia: the experience of parents and health professionals. <i>Social Science and Medicine</i> . 1998; 47(11): 1639-1651.	Parents' views re neonatal diagnosis.

## 9 Screening for fetal anomalies

### 9.2 Screening for Down's Syndrome

**Clinical question:** What is the diagnostic value and effectiveness of the following screening methods in identifying babies with Down's Syndrome: blood tests, nuchal translucency, maternal age, ultrasound soft markers? Different timings include: first trimester, second trimester, integrated test.

Bibliographic Information	Reason For exclusion
Title: Screening of maternal serum for fetal Down's syndrome in the first trimester Authors: Haddow JE;Palomaki GE;Knight GJ;Williams J;Miller WA;Johnson A; Journal: New England Journal of Medicine Year: 1998 Apr 2	Better quality studies (larger sample size, better quality control, reduced risk of bias) already included for the first trimester tests.
Title: Maternal serum screening for Down's syndrome on population basis Authors: Salonen R;Turpeinen U;Kurki L;Lappalainen M;Ammala P;Hiilesmaa V;Teramo K;von Koskull H;Gahmberg N;Stenman UH; Journal: Acta Obstetrica et Gynecologica Scandinavica Year: 1997 Oct	Tests used in the study not relevant for the guideline question
Title: Measurement of nuchal translucency as a single strategy in trisomy 21 screening: Should we use any other marker? Authors: Comas C;Torrents M;Oz AU;Antolin E;Figueras F;Echevarria M; Journal: Obstetrics and Gynecology Year: 2002	Test (only NT) not relevant for the guideline question
Title: Screening for Down syndrome using first-trimester ultrasound and second-trimester maternal serum markers in a low-risk population: A prospective longitudinal study Authors: Audibert F;Dommergues M;Benattar C;Taieb J;Thalabard J;Frydman R; Journal: Ultrasound in Obstetrics and Gynecology Year: 2001	Better quality studies (larger sample size, better quality control, reduced risk of bias) already included for the combined first and second trimester tests.
Title: Down's syndrome screening with nuchal translucency at 12(+0)-14(+0) weeks and maternal serum markers at 14(+1)-17(+0) weeks: a prospective study Authors: Rozenberg P;Malagrida L;Cuckle H;Durand-Zaleski I;Nisand I;Audibert F;Benattar C;Tribalat S;Cartron M;Lemarie P;Stoessel J;Capolagui P;Janse-Marec J;Barbier D;Allouch C;Perdu M;Roberto A;Lahna Z;Giudicelli Y;Ville Y; Journal: Human Reproduction Year: 2002 Apr	Better quality studies already included for the combined first and second trimester tests
Title: Combined ultrasound biometry, serum markers and age for Down syndrome risk estimation Authors: Bahado-Singh RO;Oz AU;Gomez K;Hunter D;Copel J;Baumgarten A;Mahoney MJ; Journal: Ultrasound in Obstetrics and Gynecology Year: 2000 Mar	Study population of women undergoing genetic amniocentesis - not relevant for the guideline question
Title: Prospective study of prenatal screening for Down's syndrome with free beta human chorionic gonadotrophin Authors: Spencer K;Carpenter P; Journal: British Medical Journal Year: 1993 Sep 25	Test (free HCG only) not relevant for the guideline question
Title: Antenatal screening for Down's syndrome with the quadruple test Authors: Wald NJ;Huttly WJ;Hackshaw AK; Journal: Lancet Year: 2003 Mar 8	Better quality studies (with larger n, quality control) already included
Title: Effect of first-trimester nuchal translucency on second-trimester maternal serum biochemical screening for Down's syndrome Authors: Thilaganathan B;Slack A;Wathen NC; Journal: Ultrasound in Obstetrics and Gynecology Year: 1997 Oct	Better quality studies (larger sample size, better quality control, reduced risk of bias) already included for the combined first and second trimester tests.
Title: Increased nuchal translucency as a marker for fetal chromosomal defects Authors: Taipale P;Hiilesmaa V;Salonen R;Ylostalo P; Journal: New England Journal of Medicine Year: 1997 Dec 4	Better quality studies already included for 'soft markers'

Bibliographic Information	Reason For exclusion
Title: Maternal serum screening of fetal chromosomal abnormalities by AFP, UE3, hCG and free-beta hCG. Prospective and retrospective results Authors: Valerio D;Aiello R;Altieri V;Fagnoni P; Journal: Minerva Ginecologica Year: 1996 May	Selected population - 35% with maternal age > 35 years. Also better quality studies already included for the second trimester tests.
Title: Serum screening for Down's syndrome between 8 and 14 weeks of pregnancy. International Prenatal Screening Research Group Authors: Wald NJ;George L;Smith D;Densem JW;Pettersen K; Journal: BJOG: An International Journal of Obstetrics & Gynaecology Year: 1996 May	Better quality studies (larger sample size, better quality control, reduced risk of bias) already included for the first trimester tests.
Title: Antenatal screening for Down's syndrome. Authors: Wald NJ;Kennard A;Hackshaw A;McGuire A; Journal: Health Technology Assessment Year: 1998	HTA on antenatal screening for Down's syndrome
Title: Fetal nasal bone length: reference range and clinical application in ultrasound screening for trisomy 21 Authors: Bunduki V;Ruano R;Miguel J;Yoshizaki CT;Kahhale S;Zugaib M; Journal: Ultrasound in Obstetrics and Gynaecology Year: 2003 Feb	Better quality studies included for fetal nasal bone evaluation
Title: First-trimester screening for aneuploidy with fetal nuchal translucency in a United States population Authors: Chasen ST;Sharma G;Kalish RB;Chervenak FA; Journal: Ultrasound in Obstetrics and Gynecology Year: 2003 Aug	Test (NT + maternal age) not relevant for the guideline question
Title: A prospective evaluation of a second-trimester screening test for fetal Down syndrome using maternal serum alpha-fetoprotein, hCG, and unconjugated estriol Authors: Cheng EY;Luthy DA;Zebelman AM;Williams MA;Lieppman RE;Hickok DE; Journal: Obstetrics and Gynecology Year: 1993 Jan	Better quality studies (larger sample size, better quality control, reduced risk of bias) already included for the second trimester tests.
Title: Prospective audit of a one-centre combined nuchal translucency and triple test programme for the detection of trisomy 21 Authors: Babbur V;Lees CC;Goodburn SF;Morris N;Breeze AC;Hackett GA; Journal: Prenatal Diagnosis Year: 2005 Jun	Study population of high risk pregnant women - not relevant for the guideline question
Title: Elevated maternal urine level of beta-core fragment of human chorionic gonadotropin versus serum triple test in the second-trimester detection of down syndrome Authors: Bahado-Singh R;Oz U;Rinne K;Hunter D;Cole L;Mahoney MJ;Baumgarten A; Journal: American Journal of Obstetrics and Gynecology Year: 1999 Oct	Tests not relevant for the guideline question
Title: New Down syndrome screening algorithm: ultrasonographic biometry and multiple serum markers combined with maternal age Authors: Bahado-Singh RO;Oz AU;Kovanci E;Deren O;Copel J;Baumgarten A;Mahoney J; Journal: American Journal of Obstetrics and Gynecology Year: 1998 Dec	Development of a new screening algorithm.
Title: Nuchal thickness, urine beta-core fragment level, and maternal age for down syndrome screening Authors: Bahado-Singh RO;Oz AU;Flores D;Cermik D;Acuna E;Mahoney MJ;Cole L; Journal: American Journal of Obstetrics and Gynecology Year: 1999 Feb	Tests not relevant for the guideline question
Title: Early genetic sonogram for Down syndrome detection Authors: Bahado-Singh RO;Mendilcioglu I;Rowther M;Choi SJ;Oz U;Yousefi NF;Mahoney MJ; Journal: American Journal of Obstetrics and Gynecology Year: 2002 Nov	Population of pregnant women undergoing amniocentesis (high risk) - not relevant for the guideline question
Title: Efficiency of ultrasound and biochemical markers for Down's syndrome risk screening. A prospective study Authors: Benattar C;Audibert F;Taieb J;Ville Y;Roberto A;Lindenbaum A;Frydman R; Journal: Fetal Diagnosis and Therapy Year: 1999 Mar	Better quality studies (large n, quality control) included for combined first & second trimester screening.
Title: Prenatal diagnosis of diverse chromosome abnormalities in a population of patients identified by triple-marker testing as screen positive for Down syndrome Authors: Benn PA;Horne D;Briganti S;Greenstein RM; Journal: American Journal of Obstetrics and Gynecology Year: 1995 Aug	Population (screen positive only) not relevant for the guideline question



Bibliographic Information	Reason For exclusion
Title: Early midtrimester fetal nuchal thickness: effectiveness as a marker of Down syndrome Authors: Borrell A;Costa D;Martinez JM;Delgado RD;Casals E;Ojuel J;Fortuny A; Journal: American Journal of Obstetrics and Gynecology Year: 1996 Jul	Study population not relevant for the guideline question - pregnant women undergoing amniocentesis
Title: Limited effectiveness of femur and humerus shortening as markers of Down syndrome in early midtrimester fetuses Authors: Borrell A;Costa D;Ojuel J;Martinez JM;Seres A;Margarit E;Fortuny A; Journal: Fetal Diagnosis and Therapy Year: 1997 May	Study population not relevant for the guideline question - women undergoing amniocentesis
Title: Screening for Down's syndrome and neural tube defect in Croatia. A regional prospective study Authors: Brajenovic-Milic B;Tislaric D;Bacic J;Paravic J;Slivar AE;Kapovic M;Kosec V;Ristic S;Rajhvajn B; Journal: Fetal Diagnosis and Therapy Year: 1998 Nov	Better quality studies already included for the relevant test
Title: First-trimester Down's syndrome screening using nuchal translucency: a prospective study in patients undergoing chorionic villus sampling Authors: Brambati B;Cislaghi C;Tului L;Alberti E;Amidani M;Colombo U;Zuliani G; Journal: Ultrasound in Obstetrics and Gynecology Year: 1995 Jan	Study population not relevant for the guideline question
Title: First-trimester screening for chromosomal abnormalities by fetal nuchal translucency in a Brazilian population Authors: Brizot ML;Carvalho MH;Liao AW;Reis NS;rmbruster-Moraes E;Zugaib M; Journal: Ultrasound in Obstetrics and Gynecology Year: 2001 Dec	Test (NT + maternal age only) not relevant for the guideline question
Title: Echogenic intracardiac focus: a sonographic sign for fetal Down syndrome Authors: Bromley B;Lieberman E;Laboda L;Benacerraf BR; Journal: Obstetrics and Gynecology Year: 1995 Dec	Study population of women undergoing amniocentesis - not relevant for the guideline question
Title: Re-evaluation of risk for Down syndrome by means of the combined test in pregnant women of 35 years or more Authors: Centini G;Rosignoli L;Scarinci R;Faldini E;Morra C;Centini G;Petraglia F; Journal: Prenatal Diagnosis Year: 2005 Feb	Study population (> 35 years) not relevant for the guideline question
Title: Fetal ear assessment and prenatal detection of aneuploidy by the quantitative three-dimensional ultrasonography Authors: Chang CH;Chang FM;Yu CH;Liang RI;Ko HC;Chen HY; Journal: Ultrasound in Medicine and Biology Year: 2000 Jun	Test not relevant for the guideline question
Title: Ultrasound clinics: putting the FASTER results into clinical practice Authors: D'Alton M;Cleary-Goldman J; Journal: Contemporary Ob/Gyn Year: 2006	Personal opinion
Title: Down's syndrome: First trimester approach Authors: De BP;Ferrero S;Prefumo F;Canini S;Marchini P;Bruzzzone I;Ginocchio G;Venturini PL; Journal: Italian Journal of Gynaecology and Obstetrics Year: 2001	Population not representative - 46% of study population underwent invasive testing.
Title: Is routine amniocentesis for advanced maternal age still indicated? Authors: Dommergues M;Audibert F;Benattar C;Champagne C;Gomel V;Frydman R; Journal: Fetal Diagnosis and Therapy Year: 2001 Nov	Study not relevant for the guideline question
Title: Screening for Down syndrome during first trimester: a prospective study using free beta-human chorionic gonadotropin and pregnancy-associated plasma protein A Authors: Forest JC;Masse J;Moutquin JM; Journal: Clinical Biochemistry Year: 1997 Jun	Comparison of serum levels of two first trimester markers between affected and unaffected pregnancies - not relevant for the guideline question.
Title: Screening for trisomy 21 by fetal nuchal translucency and maternal age: a multicenter project in Germany, Austria and Switzerland Authors: Gasiorek-Wiens A;Tercanli S;Kozlowski P;Kossakiewicz A;Minderer S;Meyberg H;Kamin G;Germer U;Bielicki M;Hackeloer BJ;Sarlay D;Kuhn P;Klapp J;Bahlmann F;Pruggmayer M;Schneider KT;Seefried W;Fritzer E;von Kaisenberg CS;German-Speaking Down Syndrome Screening Group.; Journal: Ultrasound in Obstetrics and Gynecology Year: 2001 Dec	Test not relevant for the guideline question

Bibliographic Information	Reason For exclusion
Title: Pregnancy-associated plasma protein A, free beta-hCG, nuchal translucency, and risk of pregnancy loss Authors: Goetzl L;Krantz D;Simpson JL;Silver RK;Zachary JM;Pergament E;Platt LD;Mahoney MJ;Wapner RJ; Journal: Obstetrics and Gynecology Year: 2004	Better quality effectiveness studies included to answer the relevant question.
Title: Phenotypic characteristics of absent and hypoplastic nasal bones in fetuses with Down syndrome: description by 3-dimensional ultrasonography and clinical significance Authors: Goncalves LF;Espinoza J;Lee W;Schoen ML;Devers P;Mazor M;Chaiworapongsa T;DeVore GR;Romero R; Journal: Journal of Ultrasound in Medicine Year: 2004 Dec	Study not relevant for the guideline question
Title: Femur/foot length ratio for detection of Down syndrome: Results of a multicenter prospective study Authors: Grandjean H;Sarramon M; Journal: American Journal of Obstetrics and Gynecology Year: 1995	Diagnostic value of a single 'soft marker'. Better quality studies already included for the relevant test.
Title: Sonographic measurement of nuchal skinfold thickness for detection of down syndrome in the second-trimester fetus: A multicenter prospective study Authors: Grandjean H;Sarramon M; Journal: Obstetrics and Gynecology Year: 1995	Selected population of pregnant women referred for amniocentesis - not relevant for the guideline question.
Title: Population screening for fetal trisomy 21: easy access to screening should be balanced against a uniform ultrasound protocol Authors: Gyselaers WJ;Vereecken AJ;Van Herck EJ;Straetmans DP;de Jonge ET;Ombelet WU;Nijhuis JG; Journal: Prenatal Diagnosis Year: 2005 Nov	Study not relevant for the guideline question
Title: Screening for fetal chromosomal abnormalities with nuchal translucency measurement in the first trimester Authors: Has R;Kalelioglu I;Ermis H;Ibrahimoglu L;Yuksel A;Yildirim A;Basaran S; Journal: Fetal Diagnosis and Therapy Year: 2006	Only NT measurement used to calculate the risk - not relevant for the guideline question
Title: The identification of risk of spontaneous fetal loss through second-trimester maternal serum screening Authors: Huang T;Owolabi T;Summers AM;Meier C;Wyatt PR; Journal: American Journal of Obstetrics and Gynecology Year: 2005 Aug	Study on association between risk of fetal loss and risk estimates from second trimester screening - not relevant for the guideline question
Title: Combined serum and nuchal translucency screening in the first trimester achieves 85% to 90% detection rate for Down and Edward syndromes Authors: Hulten M; Journal: Evidence-Based Healthcare Year: 2004	Commentary
Title: Maternal serum screening for down syndrome by using alpha-fetoprotein and human chorionic gonadotropin in an asian population. a prospective study Authors: Jou HJ;Shyu MK;Chen SM;Shih JC;Hsu JJ;Hsieh FJ; Journal: Fetal Diagnosis and Therapy Year: 2000 Mar	Test (using only AFP & HCG levels) not relevant for the guideline question
Title: First-trimester Down's syndrome screening by fetal nuchal translucency measurement in Taiwan Authors: Jou HJ;Shih JC;Wu SC;Li TC;Tzeng CY;Hsieh FJ; Journal: Journal of the Formosan Medical Association Year: 2001 Apr	Test not relevant for the guideline question - only NT measured
Title: Nasal bone measurement during the 1st trimester: is it useful? Authors: Kelekci S;Yazicioglu HF;Oguz S;Inan I;Yilmaz B;Sonmez S; Journal: Gynecologic and Obstetric Investigation Year: 2004	Better quality studies already included for fetal nasal bone assessment.
Title: Efficacy of maternal serum screening in the prenatal detection of fetal chromosome abnormalities in Japanese women Authors: Kishida T;Hoshi N;Hattori R;Negishi H;Yamada H;Okuyama K;Hanatani K;Takagi T;Sagawa T;Fujimoto S; Journal: Fetal Diagnosis and Therapy Year: 2000 Mar	Selected population and 63% more than 35 years of age.
Title: The anterior iliac separation: alternative index for pelvic morphometry in fetuses with Down syndrome Authors: Kliewer MA;Hertzberg BS;Freed KS;McNally PJ;DeLong DM; Journal: American Journal of Roentgenology Year: 2001 Apr	Test not relevant for the guideline question

Bibliographic Information	Reason For exclusion
Title: Procedure-related miscarriages and Down syndrome-affected births: implications for prenatal testing based on women's preferences Authors: Kuppermann M;Nease RF;Learman LA;Gates E;Blumberg B;Washington AE; Journal: Obstetrics and Gynecology Year: 2000 Oct	Population with high maternal age (mean age 34yrs) - selected population
Title: Does maternal serum screening for Down syndrome induce anxiety in younger mothers? Authors: Lai FM;Ng CC;Yeo GS; Journal: Singapore Medical Journal Year: 2004 Aug	Better quality studies already included to answer the relevant question
Title: Nasal bone evaluation in fetuses with Down syndrome during the second and third trimesters of pregnancy Authors: Lee W;DeVore GR;Comstock CH;Kalache KD;McNie B;Chaiworapongsa T;Conoscenti G;Treadwell MC;Johnson A;Huang R;Romero R; Journal: Journal of Ultrasound in Medicine Year: 2003 Jan	Nasal bone evaluation in second & third trimester - not relevant for the guideline question
Title: Fetuses with Down's Syndrome detected by prenatal screening are more likely to abort spontaneously than fetuses with Down's Syndrome not detected by prenatal screening Authors: Leporrier N;Herrou M;Morello R;Leymarie P; Journal: BJOG: an International Journal of Obstetrics and Gynaecology Year: 2003 Jan	Study not relevant for the guideline question
Title: Maternal serum Down syndrome screening: free beta-protein is a more effective marker than human chorionic gonadotropin. Authors: Macri JN;Kasturi RV;Krantz DA;Cook EJ;Moore ND;Young JA;Romero K;Larsen JW; Journal: American Journal of Obstetrics and Gynecology Year: 1990 Oct	Study not relevant for the guideline question
Title: Pregnancy outcome and prognosis in fetuses with increased first-trimester nuchal translucency Authors: Mangione R;Guyon F;Taine L;Wen ZQ;Roux D;Vergnaud A;Maugey-Laulom B;Horovitz J;Saura R; Journal: Fetal Diagnosis and Therapy Year: 2001 Nov	Study on prognosis and outcomes of fetuses with increased NT - not relevant for the guideline question
Title: Significance of fetal intracardiac echogenic foci in relation to trisomy 21: a prospective sonographic study of high-risk pregnant women Authors: Manning JE;Ragavendra N;Sayre J;Laifer-Narin SL;Melany ML;Grant EG;Crandall BF; Journal: American Journal of Roentgenology Year: 1998 Apr	Population of high risk women - not relevant for the guideline question
Title: First trimester combined screening for chromosomal defects: Our results in a population with a high percent of women aged 35 or older Authors: Montalvo J;Gomez ML;Ortega MD;Soler P;Herraiz I;Herraiz MA; Journal: Ultrasound Review of Obstetrics and Gynecology Year: 2005	Population not relevant for the guideline question
Title: Down syndrome maternal serum marker screening after 18 weeks' gestation Authors: Muller F;Dreux S;Oury JF;Luton D;Uzan S;Uzan M;Levardon M;Dommergues M; Journal: Prenatal Diagnosis Year: 2002 Nov	Determination of reference values for serum markers at 18-35 weeks - study not relevant for the guideline question
Title: First-trimester screening for Down syndrome in France combining fetal nuchal translucency measurement and biochemical markers Authors: Muller F;Benattar C;Audibert F;Roussel N;Dreux S;Cuckle H; Journal: Prenatal Diagnosis Year: 2003 Oct	Better quality studies (bigger sample size, quality control) on 'combined test' already included.
Title: Nasal bone hypoplasia in trisomy 21 at 15 to 24 weeks' gestation in A high risk Thai population Authors: Naraphut B;Uerpaiojkit B;Chaithongwatthana S;Tannirandom Y;Tanawattanacharoen S;Manotaya S;Charoenvidhya D; Journal: Journal of the Medical Association of Thailand Year: 2006 Jul	Population not relevant for the guideline question
Title: Fetal nuchal translucency: ultrasound screening for fetal trisomy in the first trimester of pregnancy. Authors: Nicolaidis KH;Brizot ML;Snijders RJ; Journal: British Journal of Obstetrics and Gynaecology Year: 1994 Sep	Test (NT + maternal age) not relevant for the guideline question

Bibliographic Information	Reason For exclusion
Title: Role of prenatal ultrasonography in women with positive screen for Down syndrome on the basis of maternal serum markers Authors: Nyberg DA;Luthy DA;Cheng EY;Sheley RC;Resta RG;Williams MA; Journal: American Journal of Obstetrics and Gynecology Year: 1995 Oct	Soft markers detected in women with positive second trimester screen only
Title: Isolated sonographic markers for detection of fetal Down syndrome in the second trimester of pregnancy Authors: Nyberg DA;Souter VL;El-Bastawissi A;Young S;Luthhardt F;Luthy DA; Journal: Journal of Ultrasound in Medicine Year: 2001 Oct	Better quality studies included for 'soft markers'
Title: First-trimester combined screening for Down syndrome and other fetal anomalies Authors: O'Leary P;Breheeny N;Dickinson JE;Bower C;Goldblatt J;Hewitt B;Murch A;Stock R; Journal: Obstetrics and Gynecology Year: 2006 Apr	Results of a screening program in Australia - better quality prospective studies already included for the 'combined test'
Title: Triple marker screening for trisomy 21, trisomy 18 and open neural tube defects in singleton pregnancies of native Japanese pregnant women Authors: Onda T;Tanaka T;Yoshida K;Nakamura Y;Kudo R;Yamamoto H;Sato A;Yanagida K;Takai Y;Uemura H;Hoshi K;Fukada Y;Miyake Y;Ohnishi M;Kaneoka T;Makino Y;Murata Y;Kanzaki T;Kanzaki H;Osaki T;Aono T;Maeda K;Ogita S;Yamamasu S;Aso T;Shimizu Y;Izutsu T;Kudo T;Okai T;Sakai M;Hashimoto T;Matsuzaki N;Kitagawa M;Sago H;Grier RE;Myrick F;Shimizu Y; Journal: Journal of Obstetrics and Gynaecology Research Year: 2000 Dec	Better quality studies included for the relevant test
Title: First-trimester screening for fetal aneuploidy: biochemistry and nuchal translucency Authors: Orlandi F;Damiani G;Hallahan TW;Krantz DA;Macri JN; Journal: Ultrasound in Obstetrics and Gynecology Year: 1997 Dec	Lack of consistent testing for the study population - NT measurement carried out in only 744/2010 cases.
Title: Measurement of nasal bone length at 11-14 weeks of pregnancy and its potential role in Down syndrome risk assessment Authors: Orlandi F;Bilardo CM;Campogrande M;Krantz D;Hallahan T;Rossi C;Viora E; Journal: Ultrasound in Obstetrics and Gynecology Year: 2003 Jul	Data from this study given in another study by the same author which is included in the review (Ref ID 34254)
Title: Association between first trimester absence of fetal nasal bone on ultrasound and Down syndrome Authors: Otano L;Aiello H;Igarzabal L;Matayoshi T;Gadow EC; Journal: Prenatal Diagnosis Year: 2002 Oct	High risk singleton pregnancies - population not relevant for the guideline question
Title: Screening for Down's syndrome by fetal nuchal translucency measurement in a high-risk population Authors: Pajkrt E;Mol BW;van Lith JM;Bleker OP;Bilardo CM; Journal: Ultrasound in Obstetrics and Gynecology Year: 1998 Sep	High risk population - not relevant for the guideline question
Title: Comparing three screening strategies for combining first- and second-trimester Down syndrome markers.[erratum appears in Obstet Gynecol. 2006 Apr;107(4):955] Authors: Palomaki GE;Steinort K;Knight GJ;Haddow JE; Journal: Obstetrics and Gynecology Year: 2006 Feb	Modelling study using SURUSS data. Another study (Ref ID 34287) with same methodology already included under modelling studies.
Title: Clinical use of first-trimester aneuploidy screening in a United States population can replicate data from clinical trials Authors: Perni SC;Predanic M;Kalish RB;Chervenak FA;Chasen ST; Journal: American Journal of Obstetrics and Gynecology Year: 2006 Jan	Better quality studies included for the relevant test
Title: Combined sonographic and biochemical markers for Down syndrome screening Authors: Pinette MG;Egan JF;Wax JR;Blackstone J;Cartin A;Benn PA; Journal: Journal of Ultrasound in Medicine Year: 2003 Nov	Retrospective review of case records for high risk pregnant women - population not relevant for the guideline question
Title: A negative second trimester triple test and absence of specific ultrasonographic markers may decrease the need for genetic amniocentesis in advanced maternal age by 60% Authors: Rosen DJD;Kedar I;Amiel A;Ben-Tovim T;Petel Y;Kaneti H;Tohar M;Feigin MD; Journal: Prenatal Diagnosis Year: 2002	Study population of women above 35 years only

Bibliographic Information	Reason For exclusion
Title: Maternal age-specific fetal loss rates in Down syndrome pregnancies Authors: Savva GM;Morris JK;Mutton DE;Alberman E; Journal: Prenatal Diagnosis Year: 2006	Association between maternal age and fetal loss - not relevant for the guideline question
Title: The first trimester 'combined test' for the detection of Down syndrome pregnancies in 4939 unselected pregnancies Authors: Schuchter K;Hafner E;Stangl G;Metzenbauer M;Hofinger D;Philipp K; Journal: Prenatal Diagnosis Year: 2002 Mar	Better studies (higher quality/larger sample size) already included for the combined test.
Title: Prospective evaluation of a first trimester screening program for Down syndrome and other chromosomal abnormalities using maternal age, nuchal translucency and biochemistry in an Australian population Authors: Scott F;Peters H;Bonifacio M;McLennan A;Boogert A;Kesby G;Anderson J; Journal: Australian and New Zealand Journal of Obstetrics and Gynaecology Year: 2004 Jun	Better studies (higher quality/larger sample size) already included for the combined test.
Title: Hyperechogenic fetal bowel and Down syndrome. Results of a French collaborative study based on 680 prospective cases Authors: Simon-Bouy B;Muller F;French Collaborative Group.; Journal: Prenatal Diagnosis Year: 2002 Mar	Study on one of the soft markers only - better quality studies already included
Title: Screening for trisomy 21 with maternal age, fetal nuchal translucency and maternal serum biochemistry at 11-14 weeks: a regional experience from Germany Authors: Soergel P;Pruggmayer M;Schwerdtfeger R;Muhlhaus K;Scharf A; Journal: Fetal Diagnosis and Therapy Year: 2006	Study population not relevant - pregnant women with higher maternal age and with multiple gestations
Title: Maternal serum screening in Ontario using the triple marker test Authors: Summers AM;Farrell SA;Huang T;Meier C;Wyatt PR; Journal: Journal of Medical Screening Year: 2003	Selected population as the uptake rate varied between 20-60%. Better quality study already included for the relevant test.
Title: Pregnant women's responses to information about an increased risk of carrying a baby with Down syndrome Authors: Susanne GO;Sissel S;Ulla W;Charlotta G;Sonja OL; Journal: Birth Year: 2006 Mar	Qualitative study with a small sample size.
Title: Evaluation of fetal femur length to detect Down syndrome in a Thai population Authors: Tannirandorn Y;Manotaya S;Uerpairakit B;Tanawattanacharoen S;Wacharaprechanont T;Charoenvidhya D; Journal: International Journal of Gynecology and Obstetrics Year: 2001	Better studies (higher quality/larger sample size) already included for the relevant test.
Title: Value of humerus length shortening for prenatal detection of Down syndrome in a Thai population Authors: Tannirandorn Y;Manotaya S;Uerpairakit B;Tanawattanacharoen S;Wacharaprechanont T;Charoenvidhya D; Journal: Journal of Obstetrics and Gynaecology Research Year: 2002 Apr	Better studies (higher quality/larger sample size) already included for the relevant test.
Title: Isolated fetal echogenic intracardiac foci or golf balls: is karyotyping for Down's syndrome indicated? Authors: Thilaganathan B;Olawaiye A;Sairam S;Harrington K; Journal: British Journal of Obstetrics and Gynaecology Year: 1999 Dec	Better studies (higher quality/larger sample size) already included for the relevant test.
Title: Prenatal sonographic markers of trisomy 21 Authors: Tongsong T;Wanapirak C;Sirichotiyakul S;Sirivatanapa P; Journal: Journal of the Medical Association of Thailand Year: 2001 Feb	Description of US features of trisomy 21 - not relevant for the guideline question
Title: Combined measurement of fetal nuchal translucency, maternal serum free beta-hCG, and pregnancy-associated plasma protein A for first-trimester Down's syndrome screening Authors: Tsai MS;Huang YY;Hwa KY;Cheng CC;Lee FK; Journal: Journal of the Formosan Medical Association Year: 2001 May	Better studies (higher quality/larger sample size) already included for the relevant test.
Title: Minor sonographic signs of trisomy 21 at 15-20 weeks' gestation in fetuses born without malformations: a prospective study Authors: Viora E;Errante G;Bastonero S;Sciarrone A;Campogrande M; Journal: Prenatal Diagnosis Year: 2001 Dec	Study population of pregnant women undergoing amniocentesis - not relevant for the guideline question.

Bibliographic Information	Reason For exclusion
<p>Title: Screening for trisomy 21 by maternal age, fetal nuchal translucency and maternal serum biochemistry at 11-14 weeks: a German multicenter study. Authors: von Kaisenberg CS;Gasiorek-Wiens A;Bielicki M;Bahlmann F;Meyberg H;Kossakiewicz A;Pruggmayer M;Kamin G;Fritzer E;Harris C;Arnold N;German Speaking Down Syndrome Screening Group.; Journal: Journal of Maternal-Fetal and Neonatal Medicine Year: 2002 Aug</p>	<p>35% of study population with maternal age more than 35 years - not relevant for the guideline question</p>
<p>Title: Second-trimester double or triple screening for Down syndrome: A comparison of Chinese and Caucasian populations Authors: Wang Y;Luo J;Zhu M;Liu L;Ma X; Journal: International Journal of Gynecology and Obstetrics Year: 2006</p>	<p>Better studies (higher quality/larger sample size) already included for the relevant test.</p>
<p>Title: Prospective evaluation of free beta-subunit of human chorionic gonadotropin and dimeric inhibin A for aneuploidy detection Authors: Wenstrom KD;Owen J;Chu D;Boots L; Journal: American Journal of Obstetrics and Gynecology Year: 1999 Oct</p>	<p>Test not relevant for the guideline question</p>
<p>Title: Echogenic intracardiac focus in 2nd-trimester fetuses with trisomy 21: usefulness as a US marker Authors: Winter TC;Anderson AM;Cheng EY;Komarniski CA;Souter VL;Uhrich SB;Nyberg DA; Journal: Radiology Year: 2000 Aug</p>	<p>Better studies (higher quality/larger sample size) already included for the relevant test.</p>
<p>Title: Improved first-trimester Down syndrome screening performance by lowering the false-positive rate: a prospective study of 9941 low-risk women Authors: Wojdemann KR;Shalmi AC;Christiansen M;Larsen SO;Sundberg K;Brocks V;Bang J;Norgaard-Pedersen B;Tabor A; Journal: Ultrasound in Obstetrics and Gynecology Year: 2005 Mar</p>	<p>Uptake rate of screening tests - 73%. Better studies (higher quality/larger sample size) already included for the relevant test.</p>
<p>Title: Decreased first trimester PAPP-A is a predictor of adverse pregnancy outcome Authors: Yaron Y;Heifetz S;Ochshorn Y;Lehavi O;Orr-Urtreger A; Journal: Prenatal Diagnosis Year: 2002</p>	<p>Test not relevant for the guideline question</p>
<p>Title: Second-trimester maternal serum screening for Down's syndrome: free beta-human chorionic gonadotrophin (HCG) and alpha-fetoprotein, with or without unconjugated oestriol, compared with total HCG, alpha- fetoprotein and unconjugated oestriol Authors: Extermann P;Bischof P;Marguerat P;Mermillod B; Journal: Human Reproduction Year: 1998 Jan</p>	<p>Better quality studies (larger sample size, better quality control, reduced risk of bias) already included for the second trimester tests.</p>
<p>Title: Psychological consequences for parents of false negative results on prenatal screening for Down's syndrome: retrospective interview study Authors: Hall S;Bobrow M;Marteau TM; Journal: British Medical Journal Year: 2000 Feb 12</p>	<p>Better quality studies already included for the relevant section</p>
<p>Title: Anxiety in women with low maternal serum alpha-fetoprotein screening results Authors: Abuelo DN;Hopmann MR;Barsel-Bowers G;Goldstein A; Journal: Prenatal Diagnosis Year: 1991 Jun</p>	<p>Higher quality studies already included to answer the relevant question</p>
<p>Title: Effectiveness of combining maternal serum alpha-fetoprotein and hCG in a second-trimester screening program for Down syndrome Authors: Mooney RA;Peterson CJ;French CA;Saller DN;Arvan DA; Journal: Obstetrics and Gynecology Year: 1994 Aug</p>	<p>Better quality studies (larger sample size, better quality control, reduced risk of bias) already included for the second trimester tests.</p>

## 10 Screening for infections

### 10.3 Chlamydia trachomatis

**Clinical question:** What is the diagnostic value and effectiveness of the following screening methods in identifying genital Chlamydia: age, urine testing, endocervical swabs, serum antibody testing, history?

Bibliographic reference	Reason for exclusion
Title: Association between bacterial vaginosis or chlamydial infection and miscarriage before 16 weeks' gestation: prospective community based cohort study Authors: Oakeshott P;Hay P;Hay S;Steinke F;Rink E;Kerry S; Journal: British Medical Journal Year: 2002 Dec 7	Data given for bacterial vaginosis only
Title: Detection of Chlamydia trachomatis infection in early pregnancy using self-administered vaginal swabs and first pass urines: a cross-sectional community-based survey Authors: Oakeshott P;Hay P;Hay S;Steinke F;Rink E;Thomas B;Oakeley P;Kerry S; Journal: British Journal of General Practice Year: 2002 Oct	Not relevant for the guideline question
Title: Detection of Chlamydia trachomatis in pregnant women by the Papanicolaou technique, enzyme immunoassay and polymerase chain reaction. Authors: Banuelos Panuco CA; Journal: Acta Cytologica Year: 2000 Mar	Study population not relevant for the guideline question - predominantly symptomatic pregnant women
Title: Enzyme immunoassay for detection of asymptomatic chlamydia cervical infection in pregnant adolescents Authors: Oh MK; Journal: Adolescent and Pediatric Gynecology Year: 1989	Population not relevant - pregnant teenagers below 17 years
Title: Prevalence of Chlamydia trachomatis infection among women in a multiphysician primary care practice Authors: Nelson ME; Journal: American Journal of Preventive Medicine Year: 1992 Sep	Not relevant for the guideline question - study on prevalence and risk factors for chlamydia
Title: Detection of Chlamydia trachomatis and Trichomonas vaginalis by polymerase chain reaction in introital specimens from pregnant women Authors: Witkin SS; Journal: American Journal of Obstetrics and Gynecology Year: 1996 Jul	Comparison of PCR results from two different sites, no reference test
Title: The Preterm Prediction Study: association of second-trimester genitourinary chlamydia infection with subsequent spontaneous preterm birth Authors: Andrews WW; Journal: American Journal of Obstetrics and Gynecology Year: 2000 Sep	Not relevant for the guideline question - study on association between chlamydia and spontaneous preterm labour
Title: Genital infections with Chlamydia trachomatis in women attending an antenatal clinic Authors: Wood PL; Journal: British Journal of Obstetrics and Gynaecology Year: 1984 Dec	Not relevant for the guideline question - isolation rate and follow up of pregnant women with chlamydia (no comparison group)
Title: Prevalence of Chlamydia trachomatis and genital mycoplasmas in asymptomatic women Authors: Embil JA; Journal: Canadian Medical Association Journal Year: 1985 Jul 1	Not relevant for the guideline question - determine the prevalence of chlamydia infection
Title: Study on vertical transmission of Chlamydia trachomatis using PCR and DNA sequencing Authors: Wu S; Journal: Chinese Medical Journal Year: 1999 May	Not relevant for the guideline question - study of vertical transmission of chlamydia infection
Title: Comparison of serological assays for detection of Chlamydia trachomatis antibodies in different groups of obstetrical and gynecological patients Authors: Bax CJ; Journal: Clinical and Diagnostic Laboratory Immunology Year: 2003 Jan	Study population not relevant for the guideline question
Title: Screening for chlamydial infection Authors: Centre for Reviews and Dissemination.; Journal: Database of Abstracts of Reviews of Effects Year: 2007	Abstract of quality assessment of a systematic review

Bibliographic reference	Reason for exclusion
Title: Accuracy of two enzyme immunoassays and cell culture in the detection of Chlamydia trachomatis in low and high risk populations in Senegal Authors: Van DE; Journal: European Journal of Clinical Microbiology and Infectious Diseases Year: 1992 Jun	Poor quality study - selected population, small sample, blinding not specified.
Title: Chlamydia trachomatis antigen detection in pregnancy and its verification by antibody blocking assay Authors: Malenie R; Journal: Indian Journal of Medical Microbiology Year: 2006 Apr	Reference test not a standard one, blinding not specified.
Title: Chlamydia trachomatis infection & female infertility Authors: Malik A; Journal: Indian Journal of Medical Research Year: 2006	Study population not relevant for the guideline question (women with primary and secondary infertility)
Title: A study of prevalence of Chlamydia trachomatis infection in women with first trimester pregnancy losses Authors: Avasthi K; Journal: Indian Journal of Pathology and Microbiology Year: 2003 Jan	Study population not relevant for the guideline question - women with ectopic pregnancy and spontaneous abortion
Title: Prevalence of urogenital Chlamydia trachomatis infection in El Salvador. I. Infection during pregnancy and perinatal transmission Authors: Canas Posada AB; Journal: International Journal of STD and AIDS Year: 1992	Reference test not a standard one, blinding not specified, study inclusion criterion not specified
Title: Effect of treatment for Chlamydia trachomatis during pregnancy Authors: Rastogi S; Journal: International Journal of Gynecology and Obstetrics Year: 2003	Poor quality study - high drop out rate, confounding variables not controlled, no comparison between study population and those lost to follow up, no blinding of outcome assessors
Title: Rapid diagnosis of chlamydial infections with the MicroTrak direct test Authors: Uyeda CT; Journal: Journal of Clinical Microbiology Year: 1984 Nov	Population not relevant – women following termination of pregnancy
Title: Accuracy of Chlamydia trachomatis antigen detection methods in a low-prevalence population in a primary care setting Authors: Gann PH; Journal: Journal of Clinical Microbiology Year: 1990 Jul	Study population made of only 18% women coming for prenatal care
Title: Detection of Chlamydia trachomatis in endocervical specimens by polymerase chain reaction Authors: Loeffelholz MJ; Journal: Journal of Clinical Microbiology Year: 1992 Nov	Study population not representative and details not given, blinding not specified, better quality studies already included for the relevant test.
Title: Multiplex AMPLICOR PCR screening for Chlamydia trachomatis and Neisseria gonorrhoeae in women attending non-sexually transmitted disease clinics. Authors: Bassiri M; Journal: Journal of Clinical Microbiology Year: 1997 Oct	Study population not relevant for the guideline - women attending contraception clinic
Title: Detection of endocervical anti-Chlamydia trachomatis immunoglobulin A in pregnant women by a rapid, 6-minute enzyme-linked immunosorbent assay: comparison with PCR and chlamydial antigen detection methods Authors: Witkin SS; Journal: Journal of Clinical Microbiology Year: 1997 Jul	Poor quality study - population not representative, no blinding, reference test not a standard one.
Title: Use of ligase chain reaction with urine versus cervical culture for detection of Chlamydia trachomatis in an asymptomatic military population of pregnant and nonpregnant females attending Papanicolaou smear clinics Authors: Gaydos CA; Journal: Journal of Clinical Microbiology Year: 1998 May	Only 30% of the study population comprised of pregnant women
Title: Use of pooled urine samples and automated DNA isolation to achieve improved sensitivity and cost-effectiveness of large-scale testing for Chlamydia trachomatis in pregnant women Authors: Rours GI; Journal: Journal of Clinical Microbiology Year: 2005 Sep	Not relevant for the guideline question - use of pooled samples
Title: Evaluation of near patient testing for Chlamydia trachomatis in a pregnancy termination service Authors: Hopwood J; Journal: Journal of Family Planning and Reproductive Health Care Year: 2001 Jul	Evaluation of a new procedure for extracting the lipopolysaccharide antigen of chlamydia
Title: Comparison of a DNA probe assay with culture for the detection of Chlamydia trachomatis Authors: Lees MI; Journal: Journal of Medical Microbiology Year: 1991 Sep	Study population not relevant for the guideline question (539/909 not pregnant).



Bibliographic reference	Reason for exclusion
Title: Chlamydial infections in pregnancy Authors: FitzSimmons J; Journal: Journal of Reproductive Medicine Year: 1986 Jan	Not relevant for the guideline question - study on impact of chlamydia on pregnancy
Title: Pathfinder direct fluorescent antigen test for diagnosing maternal chlamydial infections. An evaluation Authors: Grossman JH; Journal: Journal of Reproductive Medicine Year: 1992 Feb	Drop out rate > 20%, blinding not specified, study population not described
Title: Frequency of Chlamydia trachomatis in pregnant women Authors: Kirmani N; Journal: JPMA - Journal of the Pakistan Medical Association Year: 1994 Mar	Poor quality study - population not representative, small 'n', blinding not specified, reference test not a standard one
Title: Health gains from screening for infection of the lower genital tract in women attending for termination of pregnancy. Authors: Blackwell AL; Journal: Lancet Year: 1993 Jul 24	Effectiveness of treating all lower genital tract infections evaluated
Title: Fine-tuning the fluorescent antibody test for chlamydial infections in pregnancy Authors: Pastorek JG; Journal: Obstetrics and Gynecology Year: 1988 Dec	Population not representative (no inclusion/exclusion criterion, small 'n'), better quality studies already included for the relevant test.
Title: A comparison of culture, direct fluorescent antibody test, and a quantitative indirect immunoperoxidase assay for detection of Chlamydia trachomatis in pregnant women Authors: Osborne NG; Journal: Obstetrics and Gynecology Year: 1988 Mar	Poor quality study - no blinding, population not representative, small 'n'
Title: Diagnosis of chlamydial infection in pregnant women using the Testpack Chlamydia diagnostic kit Authors: Grossman III JH; Journal: Obstetrics and Gynecology Year: 1991	Population not representative (at high risk of chlamydia infection), blinding not specified.
Title: Detection of Chlamydia trachomatis and Neisseria gonorrhoeae in swab specimens by the Hybrid Capture II and PACE 2 nucleic acid probe tests Authors: Modarress KJ; Journal: Sexually Transmitted Diseases Year: 1999 May	Study population not relevant for the guideline question - women and men attending STD and family planning clinics
Title: The association between Chlamydia trachomatis genital infection and spontaneous preterm labour Authors: Odendaal HJ; Journal: South African Journal of Obstetrics and Gynaecology Year: 2006	Not relevant for the guideline question - study on association between chlamydia and spontaneous preterm labour
Title: Experience with the routine use of erythromycin for chlamydial infections in pregnancy Authors: Schachter J;Sweet RL;Grossman M;Landers D;Robbie M;Bishop E; Journal: New England Journal of Medicine Year: 1986 Jan 30	Poor quality study - high drop out rate, confounding variables not controlled, no blinding of outcome assessors
Title: Incidence of chlamydial infection in pregnant women and the effectiveness of treatment in prevention of neonatal disease Authors: Khurana CM; Journal: Clinical Research Year: 1982	Poor quality study
Title: Screening for Chlamydia trachomatis in asymptomatic women in Hungary. An epidemiological and cost-effectiveness analysis Authors: Nyari T;Nyari C;Woodward M;Meszaros G;Deak J;Nagy E;Kovacs L; Journal: Acta Obstetricia et Gynecologica Scandinavica Year: 2001 Apr	Not relevant for the guideline question - an epidemiological analysis
Title: Postabortal endometritis and isolation of Chlamydia trachomatis Authors: Barbacci MB;Spence MR;Kappus EW;Rao L;Quinn TC; Journal: Obstetrics and Gynecology Year: 1986	Not relevant for the guideline question - association between chlamydia and postabortal endometritis
Title: Cervico-vaginal Chlamydia trachomatis infection in pregnant adolescent and adult women. A morphologic and immunofluorescent study Authors: Cavaliere MJ;Maeda MY;Shirata NK;Longatto FA;Shih LW;de Siqueira M;Muelenare Correa MG;Oliveira HF; Journal: Archives of Gynecology and Obstetrics Year: 1993	Reference test not a standard one (Pap smear compared with DFA)
Title: High prevalence of chlamydia and Pap-smear abnormalities in pregnant adolescents warrants routine screening Authors: Quinlivan JA;Petersen RW;Gurrin LC; Journal: Australian and New Zealand Journal of Obstetrics and Gynaecology Year: 1998	Study population not relevant for the guideline question - pregnant adolescents less than 17 years

Bibliographic reference	Reason for exclusion
Title: Screening for Chlamydia trachomatis infection in an inner-city population: a comparison of diagnostic methods Authors: Quinn TC;Warfield P;Kappus E;Barbacci M;Spence M; Journal: Journal of Infectious Diseases Year: 1985 Aug	About half of study population not relevant for the guideline question (women attending STD clinics and symptomatic men), blinding not specified. Better quality studies already included for the relevant test.
Title: Detection of Chlamydia trachomatis cervical infection: a comparison of Papanicolaou and immunofluorescent staining with cell culture Authors: Quinn TC;Gupta PK;Burkman RT;Kappus EW;Barbacci M;Spence MR; Journal: American Journal of Obstetrics and Gynecology Year: 1987 Aug	Selected population, high drop-out rate for Pap smear, better quality studies already included for the relevant tests
Title: Maternal genital Chlamydia trachomatis infection and the risk of preterm labor Authors: Ngassa PC;Egbe JA; Journal: International Journal of Gynaecology and Obstetrics Year: 1994 Dec	Not relevant for the guideline question - study on association between chlamydia and risk of preterm labour
Title: Chlamydia trachomatis infection in late pregnancy: A prospective study Authors: Preece PM;Ades A;Thompson RG;Brooks JH; Journal: Paediatric and Perinatal Epidemiology Year: 1989	Study on natural history and complications of chlamydia infection in infants
Title: Chlamydia trachomatis infection in infants: A prospective study Authors: Preece PM;Anderson JM;Thompson RG; Journal: Archives of Disease in Childhood Year: 1989	Study on natural history and complications of chlamydia infection in infants
Title: Chlamydia trachomatis infection in pregnancy: risk factor for an adverse outcome Authors: Rastogi S;Kapur S;Salhan S;Mittal A; Journal: British Journal of Biomedical Science Year: 1999	Poor quality study - high drop-out rate, small sample, confounding variables not controlled, blinding not specified
Title: Screening positive urine pregnancy tests for sexually transmitted diseases expedites the treatment of infected adolescent gravidas. Authors: Stevens-Simon C;Rudnick M;Beach RK;Weinberg A; Journal: Journal of Maternal-Fetal and Neonatal Medicine Year: 2002	Comparison of STD treatment rate by universal urine screening vs. clinics practice of endocervical testing at providers discretion - not relevant for the guideline question
Title: Chlamydia trachomatis infection among pregnant women: prevalence and prenatal importance Authors: Paul VK;Singh M;Gupta U;Buckshee K;Bhargava VL;Takkar D;Nag VL;Bhan MK;Deorari AK; Journal: National Medical Journal of India Year: 1999	Not relevant for the guideline question - study comparing perinatal outcomes between chlamydia positive and negative pregnant women
Title: Screening for chlamydial infection Authors: Nelson HD;Hefland M; Journal: American Journal of Preventive Medicine Year: 2001	Guideline by the US task force
Title: Prevalence of Chlamydia trachomatis infection in pregnant patients Authors: Much DH;Yeh SY; Journal: Public Health Reports Year: 1991 Sep	Poor quality study - high drop-out rate, confounding variables not controlled, blinding not specified.

## 11 Screening for clinical problems

### 11.1 Gestational diabetes

**Clinical question:** What is the diagnostic value and effectiveness of screening tests to identify women at risk of diabetes in pregnancy?

Bibliographic Information	Reason for exclusion
Authors: Agarwal MM;Hughes PF;Punnose J;Ezimokhai M;. Title: Fasting plasma glucose as a screening test for gestational diabetes in a multi-ethnic, high-risk population. Journal Name: Diabetic Medicine. Year: 2000 Oct	Unable to get diagnostic value of the test from this study.
Authors: Agarwal MM;Hughes PF;Punnose J;Ezimokhai M;Thomas L;. Title: Gestational diabetes screening of a multiethnic, high-risk population using glycosylated proteins. Journal Name: Diabetes Research and Clinical Practice. Year: 2001 Jan	Unable to get diagnostic value of the test from this study.
Authors: Agarwal MM;Dhatt GS;Punnose J;Koster G;. Title: Gestational diabetes: a reappraisal of HBA1c as a screening test. Journal Name: Acta Obstetrica et Gynecologica Scandinavica. Year: 2005 Dec	Unable to get diagnostic value of the test from this study.
Authors: Agarwal MM;Dhatt GS;Punnose J;Koster G;. Title: Gestational diabetes in a high-risk population: using the fasting plasma glucose to simplify the diagnostic algorithm. Journal Name: European Journal of Obstetrics, Gynecology and Reproductive Biology. Year: 2005 May 1	Unable to get diagnostic value of the test from this study.
Authors: Agarwal MM;Hughes PF;Ezimokhai M;. Title: Screening for gestational diabetes in a high-risk population using fasting plasma glucose. Journal Name: International Journal of Gynaecology and Obstetrics. Year: 2000 Feb	Unable to get diagnostic value of the test from this study.
Authors: Bergus GR;Murphy NJ;. Title: Screening for gestational diabetes mellitus: comparison of a glucose polymer and a glucose monomer test beverage. Journal Name: Journal of the American Board of Family Practice. Year: 1992 May	Not relevant to the clinical question.
Authors: Buhling KJ;Henrich W;Kjos SL;Siebert G;Starr E;Dreweck C;Stein U;Dudenhausen JW;. Title: Comparison of point-of-care-testing glucose meters with standard laboratory measurement of the 50g-glucose-challenge test (GCT) during pregnancy. Journal Name: Clinical Biochemistry. Year: 2003 Jul	Unable to answer the clinical question.
Authors: Chandna A;Zuberi LM;Munim S;. Title: Threshold values for the glucose challenge test in pregnancy. Journal Name: International Journal of Gynecology and Obstetrics. Year: 2006	Unable to get diagnostic value of the test from this study.
Authors: Coustan DR;Widness JA;Carpenter MW;Rotondo L;Pratt DC;Oh W;. Title: Should the fifty-gram, one-hour plasma glucose screening test for gestational diabetes be administered in the fasting or fed state?. Journal Name: American Journal of Obstetrics and Gynecology. Year: 1986 May	Unable to get diagnostic value of the test from this study.
Authors: Di CG;Benzi L;Casadidio I;Orsini P;Rossi L;Fontana G;Malara N;Villani G;Di CA;Trifiro R;Bottone P;Luchi C;Fantoni M;Teti G;Marselli L;Volpe L;Navalesi R;. Title: Screening of gestational diabetes in Tuscany: results in 2000 cases. Journal Name: Annali Dell'Istituto Superiore di Sanita. Year: 1997	Unable to get diagnostic value of the test from this study.
Authors: Dornhorst A;Frost G;. Title: Jelly-beans, only a colourful distraction from gestational glucose-challenge tests. Journal Name: Lancet. Year: 2000 Feb 26	Not relevant to the clinical question under study.
Authors: Fluckiger R;Woodtli T;Berger W;. Title: Evaluation of the fructosamine test for the measurement of plasma protein glycation. Journal Name: Diabetologia. Year: 1987 Aug	Unable to get diagnostic value of the test from this study.

Bibliographic Information	Reason for exclusion
Authors: Hartland AJ;Smith JM;Dunne F;. Title: Correcting serum fructosamine concentration for total protein or albumin concentration is not appropriate during Asian pregnancy. Journal Name: Clinica Chimica Acta. Year: 2000	Unable to get diagnostic value of the test from this study.
Authors: Henny J;Schiele F;Kruse-Jarres JD;Kaiser C;Bonini P;Ceriotti F;Schlebusch H;Sorger M;Garcia-Beltran L;Jarausch J;Klein G;Vogt BW;Zawta B;Domke I;. Title: Detetermination of reference values for a colorimetric fructosamine assay. Journal Name: Klinisches Labor. Year: 1992	Not relevant to the clinical question under study.
Authors: Jimenez-Moleon JJ;Bueno-Cavanillas A;Luna-del-Castillo JD;Lardelli-Claret P;Garcia-Martin M;Galvez-Vargas R;. Title: Predictive value of a screen for gestational diabetes mellitus: influence of associated risk factors. Journal Name: Acta Obstetrica et Gynecologica Scandinavica. Year: 2000 Nov	Unable to get diagnostic value of the test from this study.
Authors: Lavin JP;Lavin B;O'Donnell N;. Title: A comparison of costs associated with screening for gestational diabetes with two-tiered and one-tiered testing protocols. Journal Name: American Journal of Obstetrics and Gynecology. Year: 2001 Feb	Unable to get diagnostic value of the test from this study.
Authors: Marquette GP;Klein VR;Repke JT;Niebyl JR;. Title: Cost-effective criteria for glucose screening. Journal Name: Obstetrics and Gynecology. Year: 1985 Aug	Unable to get diagnostic value of the test from this study.
Authors: Nahum GG;Stanislaw H;. Title: Correlation between one-hour, 50-g glucose screening values in successive pregnancies. Journal Name: Journal of Reproductive Medicine. Year: 2002 Jul	Does not help answer the clinical question.
Authors: Nahum GG;Wilson SB;Stanislaw H;. Title: Early-pregnancy glucose screening for gestational diabetes mellitus. Journal Name: Journal of Reproductive Medicine. Year: 2002 Aug	Unable to get diagnostic value of the test from this study.
Authors: Phillipov G;. Title: Short- and long-term reproducibility of the 1-h 50-g glucose challenge test. Journal Name: Clinical Chemistry. Year: 1996 Feb	Unable to get diagnostic value of the test from this study.
Authors: Rey E;Hudon L;Michon N;Boucher P;Ethier J;Saint-Louis P;. Title: Fasting plasma glucose versus glucose challenge test: screening for gestational diabetes and cost effectiveness. Journal Name: Clinical Biochemistry. Year: 2004 Sep	Not relevant population to calculate diagnostic value of the test
Authors: Roberts AB;Baker JR;Metcalf P;Mullard C;. Title: Fructosamine compared with a glucose load as a screening test for gestational diabetes. Journal Name: Obstetrics and Gynecology. Year: 1990 Nov	Not relevant population to calculate the diagnostic value of the test.
Authors: Schytte T;Jorgensen LG;Brandslund I;Petersen PH;Andersen B;. Title: The clinical impact of screening for gestational diabetes. Journal Name: Clinical Chemistry and Laboratory Medicine. Year: 2004	Not relevant population.

## 11.2 Pre-eclampsia

**Clinical question:** What is the diagnostic value of different screening methods in identifying women at risk of developing pre-eclampsia?

Bibliographic Information	Reason for exclusion
Authors: Nicolaidis KH;Bindra R;Turan OM;Chefetz I;Sammar M;Meiri H;Tal J;Cuckle HS;. Title: A novel approach to first-trimester screening for early pre-eclampsia combining serum PP-13 and Doppler ultrasound. Journal Name: Ultrasound in Obstetrics and Gynecology. Year: 2006 Jan	This does not help answer the clinical question of diagnostic value of test for pre-eclampsia.
Authors: Papageorghiou AT;Campbell S;. Title: First trimester screening for preeclampsia. Journal Name: Current Opinion in Obstetrics and Gynecology. Year: 2006	This does not help answer the clinical question of diagnostic value of test for pre-eclampsia.
Authors: Parra M;Rodrigo R;Barja P;Bosco C;Fernandez V;Munoz H;Soto-Chacon E;. Title: Screening test for preeclampsia through assessment of uteroplacental blood flow and biochemical markers of oxidative stress and endothelial dysfunction. Journal Name: American Journal of Obstetrics and Gynecology. Year: 2005 Oct	This does not help answer the clinical question of diagnostic value of test for pre-eclampsia.
Authors: Price CP;Newall RG;Boyd JC;. Title: Use of protein:creatinine ratio measurements on random urine samples for prediction of significant proteinuria: a systematic review.. Journal Name: Clinical Chemistry. Year: 2005 Sep	This does not help answer the clinical question of diagnostic value of test for pre-eclampsia.
Authors: Aggarwal PK;Jain V;Sakhuja V;Karumanchi SA;Jha V;. Title: Low urinary placental growth factor is a marker of pre-eclampsia. Journal Name: Kidney International. Year: 2006 Feb	This does not help answer the clinical question of diagnostic value of test for pre-eclampsia.
Authors: Bergel E;Carroli G;Althabe F;. Title: Ambulatory versus conventional methods for monitoring blood pressure during pregnancy. Journal Name: Cochrane Database of Systematic Reviews. Year: 2004	We are interested in finding the diagnostic value of the test for pre-eclampsia.
Authors: Bodnar LM;Ness RB;Markovic N;Roberts JM;. Title: The risk of preeclampsia rises with increasing prepregnancy body mass index. Journal Name: Annals of Epidemiology. Year: 2005 Aug	This does not help answer the clinical question of diagnostic value of test for pre-eclampsia.
Authors: Chan P;Brown M;Simpson JM;Davis G;. Title: Proteinuria in pre-eclampsia: how much matters?. Journal Name: BJOG: an International Journal of Obstetrics and Gynaecology. Year: 2005 Mar	A review paper
Authors: Cnossen J;de Ruyter-Hanhijarvi H;Van Der PJ;Mol B;Khan K;ter RG;. Title: Accuracy of serum uric acid determination in predicting pre-eclampsia: A systematic review. Journal Name: Acta Obstetrica et Gynecologica Scandinavica. Year: 2006	This does not help answer the clinical question of diagnostic value of test for pre-eclampsia.
Authors: Florio P;D'Aniello G;Sabatini L;Severi FM;Fineschi D;Bocchi C;Reis FM;Petraglia F;. Title: Factor II: C activity and uterine artery Doppler evaluation to improve the early prediction of pre-eclampsia on women with gestational hypertension.[see comment]. Journal Name: Journal of Hypertension. Year: 2005 Jan	This does not help answer the clinical question of diagnostic value of test for pre-eclampsia.
Authors: Gomez O;Martinez JM;Figueras F;Del RM;Borobio V;Puerto B;Coll O;Cararach V;Vanrell JA;. Title: Uterine artery Doppler at 11-14 weeks of gestation to screen for hypertensive disorders and associated complications in an unselected population.[see comment]. Journal Name: Ultrasound in Obstetrics and Gynecology. Year: 2005 Oct	This does not help answer the clinical question of diagnostic value of test for pre-eclampsia.
Authors: Milne F;Redman C;Walker J;Baker P;Bradley J;Cooper C;de SM;Fletcher G;Jokinen M;Murphy D;Nelson-Piercy C;Osgood V;Robson S;Shennan A;Tuffnell A;Twaddle S;Waugh J;. Title: The pre-eclampsia community guideline (PRECOG): How to screen for and detect onset of pre-eclampsia in the community. Journal Name: British Medical Journal. Year: 2005	This is not a study

### 11.3 Preterm birth

**Clinical question:** What is the diagnostic value of the following screening methods in identifying women at risk of preterm labour: history, vaginal examinations, ultrasound scan (cervical length up to 22 weeks of pregnancy), oral health/dental health, swabs for bacterial vaginosis?

Bibliographic reference	Reason for exclusion
Title: Fetal fibronectin as a predictor of preterm birth in patients with symptoms: a multicenter trial Authors: Peaceman AM; Journal: American Journal of Obstetrics and Gynecology Year: 1997	Population not relevant for the guideline question - women with preterm labour
Title: Early pregnancy threshold vaginal pH and Gram stain scores predictive of subsequent preterm birth in asymptomatic women Authors: Hauth JC;MacPherson C;Carey JC;Klebanoff MA;Hillier SL;Ernest JM;Leveno KJ;Wapner R;Varner M;Trout W;Moawad A;Sibai B; Journal: American Journal of Obstetrics and Gynecology Year: 2003 Mar	Not relevant for the guideline question - identification of early vaginal markers predictive of preterm labour
Title: Bacterial vaginosis as a risk factor for preterm delivery: a meta-analysis Authors: Leitich H;Bodner-Adler B;Brunbauer M;Kaider A;Egarter C;Husslein P; Journal: American Journal of Obstetrics and Gynecology Year: 2003 Jul	Not relevant for the guideline question
Title: Accuracy of cervical transvaginal sonography in predicting preterm birth: a systematic review. Authors: Honest H;Bachmann LM;Coomarasamy A;Gupta JK;Kleijnen J;Khan KS; Journal: Ultrasound in Obstetrics and Gynecology Year: 2003 Sep	Population also includes women with preterm labour and multiple gestations.
Title: Comparison of two-dimensional and three-dimensional ultrasound in the assessment of the cervix to predict preterm delivery Authors: Severi FM;Bocchi C;Florio P;Picciolini E;D'Aniello G;Petraglia F; Journal: Ultrasound in Medicine and Biology Year: 2003	Not relevant for the guideline question
Title: Randomised controlled trial of routine cervical examinations in pregnancy. European Community Collaborative Study Group on Prenatal Screening [see comments] Authors: Buekens P;Alexander S;Boutsen M;Blondel B;Kaminski M;Reid M; Journal: Lancet Year: 1994 Sep 24	Not relevant for the guideline question
Title: Does availability of fetal fibronectin testing in the management of threatened preterm labour affect the utilization of hospital resources? Authors: Abenhaim HA;Morin L;Benjamin A; Journal: Journal of Obstetrics and Gynaecology Canada: JOGC Year: 2005 Jul	Study on utilization of hospital resources with fetal fibronectin testing - not relevant for the guideline question
Title: Value of cervical phosphorylated insulinlike growth factor binding protein-1 in the prediction of preterm labor Authors: Akercan F;Kazandi M;Sendag F;Cirpan T;Mgoyi L;Terek MC;Sagol S; Journal: Journal of Reproductive Medicine Year: 2004 May	Test not relevant for the guideline question
Title: Comparison of transvaginal sonography in recumbent and standing maternal positions to predict spontaneous preterm birth in singleton and twin pregnancies Authors: Arabin B;Roos C;Kollen B;van EJ; Journal: Ultrasound in Obstetrics and Gynecology Year: 2006	Study not relevant for the guideline question - comparison of TVS in recumbent and standing position
Title: Fetal fibronectin in vaginal specimens predicts preterm delivery and very-low-birth-weight infants Authors: Bartnicki J;Casal D;Kreaden US;Saling E;Vetter K; Journal: American Journal of Obstetrics and Gynecology Year: 1996 Mar	Population not relevant for the guideline question - women with threatened preterm delivery

Bibliographic reference	Reason for exclusion
Title: Prediction of spontaneous onset of labor at term: The role of cervical length measurement and funneling of internal cervical os detected by transvaginal ultrasonography Authors: Bayramoglu O;Arslan M;Yazici FG;Erdem A;Erdem M;Bayramoglu K;Camdeviren H; Journal: American Journal of Perinatology Year: 2005	Study not relevant for the guideline question
Title: Cervical ultrasonography compared with manual examination as a predictor of preterm delivery Authors: Berghella V;Tolosa JE;Kuhlman K;Weiner S;Bolognese RJ;Wapner RJ; Journal: American Journal of Obstetrics and Gynecology Year: 1997 Oct	Population not relevant for the guideline question - women at high risk of preterm delivery
Title: Prediction of preterm delivery with transvaginal ultrasonography of the cervix in patients with high-risk pregnancies: does cerclage prevent prematurity? Authors: Berghella V;Daly SF;Tolosa JE;DiVito MM;Chalmers R;Garg N;Bhullar A;Wapner RJ; Journal: American Journal of Obstetrics and Gynecology Year: 1999 Oct	Population not relevant for the guideline question - high risk women
Title: Does transvaginal sonographic measurement of cervical length before 14 weeks predict preterm delivery in high-risk pregnancies? Authors: Berghella V;Talucci M;Desai A; Journal: Ultrasound in Obstetrics and Gynecology Year: 2003 Feb	Population not relevant for the guideline question - women at high risk of preterm birth
Title: Prior cone biopsy: Prediction of preterm birth by cervical ultrasound Authors: Berghella V;Pereira L;Garipey A;Simonazzi G; Journal: American Journal of Obstetrics and Gynecology Year: 2004	Population not relevant for the guideline question - women with H/O cervical cone biopsy
Title: Cervical fetal fibronectin in patients at increased risk for preterm delivery Authors: Bittar RE;Yamasaki AA;Sasaki S;Zugaib M; Journal: American Journal of Obstetrics and Gynecology Year: 1996 Jul	Population not relevant for the guideline question - women at high risk of preterm delivery
Title: Prediction of preterm delivery by sonographic estimation of cervical length Authors: Botsis D;Papagianni V;Vitoratos N;Makrakis E;Aravantinos L;Creatas G; Journal: Biology of the Neonate Year: 2005	Population not relevant for the guideline question - women with threatened preterm labour
Title: The value of cervical length and plasma proMMP-9 levels for the prediction of preterm delivery in pregnant women presenting with threatened preterm labor Authors: Botsis D;Makrakis E;Papagianni V;Kouskouni E;Grigoriou O;Dendrinos S;Creatas G; Journal: European Journal of Obstetrics, Gynecology, and Reproductive Biology Year: 2006	Population not relevant for the guideline question - women with threatened preterm labour
Title: Fetal fibronectin, interleukin-6, and C-reactive protein are useful in establishing prognostic subcategories of idiopathic preterm labor Authors: Burrus DR;Ernest JM;Veille JC; Journal: American Journal of Obstetrics and Gynecology Year: 1995 Oct	Study not relevant for the guideline question
Title: Combination of vaginal pH with vaginal sialidase and prolidase activities for prediction of low birth weight and preterm birth Authors: Cauci S;McGregor J;Thorsen P;Grove J;Guaschino S; Journal: American Journal of Obstetrics and Gynecology Year: 2005 Feb	Tests not relevant for the guideline question
Title: Accuracy of absence of fetal breathing movements in predicting preterm birth: a systematic review (Provisional record) Authors: Centre for Reviews and Dissemination.; Journal: Database of Abstracts of Reviews of Effects Year: 2006	Quality appraisal of the review carried out by CRD
Title: Accuracy of cervical transvaginal sonography in predicting preterm birth: a systematic review (Structured abstract) Authors: Centre for Reviews and Dissemination.; Journal: Database of Abstracts of Reviews of Effects Year: 2006	Quality appraisal of the review carried out by CRD
Title: Accuracy of cervicovaginal fetal fibronectin test in predicting risk of spontaneous preterm birth: systematic review (Structured abstract) Authors: Centre for Reviews and Dissemination.; Journal: Database of Abstracts of Reviews of Effects Year: 2006	Quality appraisal of the review carried out by CRD

Bibliographic reference	Reason for exclusion
Title: Cervicovaginal fetal fibronectin as a marker for preterm delivery: a meta-analysis (Structured abstract) Authors: Centre for Reviews and Dissemination.; Journal: Database of Abstracts of Reviews of Effects Year: 2006	Quality appraisal of the review carried out by CRD
Title: Transvaginal ultrasound in pregnancy: its acceptability to women and maternal psychological morbidity Authors: Clement S;Candy B;Heath V;To M;Nicolaidis KH; Journal: Ultrasound in Obstetrics and Gynecology Year: 2003 Nov	Study not relevant for the guideline question
Title: Corticotropin-releasing hormone, corticotropin-releasing hormone-binding protein, and activin A in maternal serum: prediction of preterm delivery and response to glucocorticoids in women with symptoms of preterm labor Authors: Coleman MA;France JT;Schellenberg JC;Ananiev V;Townend K;Keelan JA;Groome NP;McCowan LM; Journal: American Journal of Obstetrics and Gynecology Year: 2000 Sep	Population not relevant for the guideline question - women with symptoms of preterm labour
Title: Predicting preterm delivery: comparison of cervicovaginal interleukin (IL)-1beta, IL-6 and IL-8 with fetal fibronectin and cervical dilatation Authors: Coleman MA;Keelan JA;McCowan LM;Townend KM;Mitchell MD; Journal: European Journal of Obstetrics, Gynecology, and Reproductive Biology Year: 2001 Apr	Population not relevant for the guideline question - women with symptoms of preterm labour
Title: Does cervical length at 13-15 weeks' gestation predict preterm delivery in an unselected population? Authors: Conoscenti G;Meir YJ;D'Ottavio G;Rustico MA;Pinzano R;Fischer-Tamaro L;Stampalija T;Natale R;Maso G;Mandruzzato G; Journal: Ultrasound in Obstetrics and Gynecology Year: 2003 Feb	Data insufficient to calculate diagnostic accuracy
Title: The value of amniotic fluid interleukin-6 determination in patients with preterm labor and intact membranes in the detection of microbial invasion of the amniotic cavity Authors: Coultrip LL;Lien JM;Gomez R;Kapernick P;Khoury A;Grossman JH; Journal: American Journal of Obstetrics and Gynecology Year: 1994 Oct	Test not relevant for the guideline question
Title: Cervical assessment in women with threatened preterm labor Authors: Daskalakis G;Thomakos N;Hatzioannou L;Mesogitis S;Papantoniou N;Antsaklis A; Journal: Journal of Maternal-Fetal and Neonatal Medicine Year: 2005 May	Population not relevant for the guideline question - women with threatened preterm labour
Title: Bacterial vaginosis and preterm delivery: An open question Authors: De SF;Sartore A;Piccoli M;Maso G;Zicari S;Panerari F;Guaschino S; Journal: Journal of Reproductive Medicine for the Obstetrician and Gynecologist Year: 2005	Higher quality studies already included in the review
Title: Preterm delivery: predictive value of cervico-vaginal fetal fibronectin Authors: Di SL;Carta G;Di PL;Palermo P;Moscarini M; Journal: Clinical and Experimental Obstetrics and Gynecology Year: 1999	Higher quality studies already included in the review
Title: Comparison of cervical volume and cervical length to predict preterm delivery by transvaginal ultrasound Authors: Dilek TU;Gurbuz A;Yazici G;Arslan M;Gulhan S;Pata O;Dilek S; Journal: American Journal of Perinatology Year: 2006 Apr	Studies with higher quality rating available
Title: Assessing the relationship between preterm delivery and various microorganisms recovered from the lower genital tract Authors: Edwards R;Ferguson R;Reyes L;Brown M;Theriaque D;Duff P; Journal: Journal of Maternal-Fetal and Neonatal Medicine Year: 2006	Study not relevant for the guideline question
Title: Assessment of cervical antibody concentrations fails to enhance the value of cervical length as a predictor of preterm delivery Authors: Edwards RK;Ferguson RJ;Shuster JJ;Theriaque D;Gentry S;Duff P; Journal: American Journal of Obstetrics and Gynecology Year: 2005 Mar	Test not relevant for the guideline question



Bibliographic reference	Reason for exclusion
Title: The interleukin-1beta +3953 single nucleotide polymorphism: Cervical protein concentration and preterm delivery risk Authors: Edwards RK;Ferguson RJ;Duff P; Journal: American Journal of Reproductive Immunology Year: 2006	Test not relevant for the guideline question
Title: The prevalence and clinical significance of amniotic fluid 'sludge' in patients with preterm labor and intact membranes Authors: Espinoza J;Goncalves LF;Romero R;Nien JK;Stites S;Kim YM;Hassan S;Gomez R;Yoon BH;Chaiworapongsa T;Lee W;Mazor M; Journal: Ultrasound in Obstetrics and Gynecology Year: 2005 Apr	Test not relevant for the guideline question
Title: Total activin A in maternal blood as a marker of preterm delivery in low-risk asymptomatic patients Authors: Farina A;Lambert-Messerlian GM;Canick JA;Banzola I;Carletti A;Concu M;Tempesta A;Gabrielli S;Morano D;Rizzo N; Journal: Prenatal Diagnosis Year: 2006	Test not relevant for the guideline question
Title: Relationship between second-trimester uterine artery Doppler and spontaneous early preterm delivery Authors: Fonseca E;Yu CKH;Singh M;Papageorgiou AT;Nicolaidis KH; Journal: Ultrasound in Obstetrics and Gynecology Year: 2006	Test not relevant for the guideline question
Title: Sonographic cervical length in singleton pregnancies with intact membranes presenting with threatened preterm labor Authors: Fuchs IB;Henrich W;Osthues K;Dudenhausen JW; Journal: Ultrasound in Obstetrics and Gynecology Year: 2004 Oct	Pregnant women with threatened preterm labor
Title: A disproportionate increase in IL-1beta over IL-1ra in the cervicovaginal secretions of pregnant women with altered vaginal microflora correlates with preterm birth.[see comment] Authors: Genc MR;Witkin SS;Delaney ML;Paraskevas LR;Tuomala RE;Norwitz ER;Onderdonk AB; Journal: American Journal of Obstetrics and Gynecology Year: 2004 May	Test not relevant for the guideline question
Title: Association between vaginal 70-kd heat shock protein, interleukin-1 receptor antagonist, and microbial flora in mid trimester pregnant women Authors: Genc MR;Karasahin E;Onderdonk AB;Bongiovanni AM;Delaney ML;Witkin SS; Journal: American Journal of Obstetrics and Gynecology Year: 2005	Test not relevant for the guideline question
Title: The effect of fetal fibronectin testing on admissions to a tertiary maternal-fetal medicine unit and cost savings Authors: Giles W;Bisits A;Knox M;Madsen G;Smith R; Journal: American Journal of Obstetrics and Gynecology Year: 2000 Feb	Study not relevant for the guideline question
Title: Bacterial vaginosis: prevalence and predictive value for premature delivery and neonatal infection in women with preterm labour and intact membranes Authors: Goffinet F;Maillard F;Mihoubi N;Kayem G;Papiernik E;Cabrol D;Paul G; Journal: European Journal of Obstetrics, Gynecology, and Reproductive Biology Year: 2003 Jun 10	Population not relevant for the guideline question
Title: The preterm prediction study: fetal fibronectin testing and spontaneous preterm birth. NICHD Maternal Fetal Medicine Units Network Authors: Goldenberg RL;Mercer BM;Meis PJ;Copper RL;Das A;McNellis D; Journal: Obstetrics and Gynecology Year: 1996 May	Results of this study given in another included study
Title: Cervicovaginal fibronectin improves the prediction of preterm delivery based on sonographic cervical length in patients with preterm uterine contractions and intact membranes Authors: Gomez R;Romero R;Medina L;Nien JK;Chaiworapongsa T;Carstens M;Gonzalez R;Espinoza J;lams JD;Edwin S;Rojas I; Journal: American Journal of Obstetrics and Gynecology Year: 2005	Study population not relevant for the guideline question

Bibliographic reference	Reason for exclusion
Title: Value of fetal fibronectin as a predictor of preterm delivery for a low-risk population Authors: Greenhagen JB;Van WJ;Dudley D;Hunter C;Mitchell M;Logsdon V;Casal D;Varner M; Journal: American Journal of Obstetrics and Gynecology Year: 1996 Oct	Better quality studies available for the relevant test
Title: Qualitative glandular cervical score as a potential new sonomorphological parameter in screening for preterm delivery Authors: Grgic O;Matijevic R;Vasilj O; Journal: Ultrasound in Medicine and Biology Year: 2006 Mar	Test not relevant for the guideline question
Title: Does fetal fibronectin use in the diagnosis of preterm labor affect physician behavior and health care costs? A randomized trial Authors: Grobman WA;Welshman EE;Calhoun EA; Journal: American Journal of Obstetrics and Gynecology Year: 2004 Jul	Study not relevant for the guideline question
Title: Pregnancy outcome after early detection of bacterial vaginosis Authors: Guerra B;Ghi T;Quarta S;Morselli-Labate AM;Lazzarotto T;Pilu G;Rizzo N; Journal: European Journal of Obstetrics, Gynecology, and Reproductive Biology Year: 2006	Study on pregnancy outcomes - not relevant for the guideline question
Title: Human chorionic gonadotropin assay in cervical secretions for accurate diagnosis of preterm labor Authors: Gurbuz A;Karateke A;Ozturkmen M;Kabaca C; Journal: International Journal of Gynecology and Obstetrics Year: 2004	Study population not relevant for the guideline question - with threatened preterm labour
Title: Beta-human chorionic gonadotropin and prolactin assays in cervicovaginal secretions as a predictor of preterm delivery Authors: Guvenal T;Kantas E;Erselcan T;Culhaoglu Y;Cetin A; Journal: International Journal of Gynecology and Obstetrics Year: 2001	Study population consist of both symptomatic and asymptomatic pregnant women, but data not given separately for the two groups.
Title: A comparison of sonographic cervical parameters in predicting spontaneous preterm birth in high-risk singleton gestations.[see comment] Authors: Guzman ER;Walters C;Ananth CV;O'Reilly-Green C;Benito CW;Palermo A;Vintzileos AM; Journal: Ultrasound in Obstetrics and Gynecology Year: 2001 Sep	Study population of high risk singleton pregnancies - not relevant for the guideline question
Title: Monocyte chemotactic protein-2 and -3 in amniotic fluid: relationship to microbial invasion of the amniotic cavity, intra-amniotic inflammation and preterm delivery Authors: Jacobsson B;Holst RM;Andersson B;Hagberg H; Journal: Acta Obstetrica et Gynecologica Scandinavica Year: 2005 Jun	Test not relevant for the guideline question
Title: Elevated second trimester amniotic fluid interferon gamma-inducible T-cell chemoattractant concentrations as a possible predictor of preterm birth Authors: Malamitsi-Puchner A;Vrachnis N;Samoli E;Baka S;Hassiakos D;Creatas G; Journal: Journal of the Society for Gynecologic Investigation Year: 2006	Test not relevant for the guideline question
Title: Increased level of granulocyte elastase in cervical secretion is an independent predictive factor for preterm delivery Authors: Nakai A;Taniuchi Y;Miyake H;Nakai M;Yokota A;Takeshita T; Journal: Gynecologic and Obstetric Investigation Year: 2005	Test not relevant for the guideline question
Title: Predictive power of maternal serum and amniotic fluid CRP and PAPP-A concentrations at the time of genetic amniocentesis for the preterm delivery Authors: Ozer KT;Kavak ZN;Gokaslan H;Elter K;Pekin T; Journal: European Journal of Obstetrics, Gynecology, and Reproductive Biology Year: 2005	Study population not relevant for the guideline question
Title: Cervical gland area as an ultrasonographic marker for preterm delivery Authors: Pires CR;Moron AF;Mattar R;Diniz ALD;Andrade SGA;Bussamra LCS; Journal: International Journal of Gynecology and Obstetrics Year: 2006	Test not relevant for the guideline question
Title: Predictive value of two-dimensional and three-dimensional multiplanar ultrasound evaluation of the cervix in preterm labor Authors: Rozenberg P;Rafii A;Senat MV;Dujardin A;Rapon J;Ville Y; Journal: Journal of Maternal-Fetal and Neonatal Medicine Year: 2003 Apr	Tests and study population (women with preterm labour) not relevant for the guideline question

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<b>Bibliographic reference</b>	<b>Reason for exclusion</b>
Title: Detection of the cervical gland area in threatened preterm labor using transvaginal sonography in the assessment of cervical maturation and the outcome of pregnancy Authors: Yoshimatsu K; Sekiya T; Ishihara K; Fukami T; Otabe T; Araki T; Journal: Gynecologic and Obstetric Investigation Year: 2002	Test not relevant for the guideline question
Title: Cervicovaginal fetal fibronectin as a marker for preterm delivery: a meta-analysis Authors: Leitich H; Egarter C; Kaider A; Hohlagschwandtner M; Berghammer P; Husslein P; Journal: American Journal of Obstetrics and Gynecology Year: 1999 May	The population includes high risk women, symptomatic women with preterm labour, and with multiple gestation

## 12 Fetal growth and wellbeing.

**Clinical question:** What is the diagnostic value and effectiveness of the following screening methods in determining fetal growth: symphysis-fundal height measurement, ultrasound scanning, use of customized growth charts with SFH measurement, use of customized growth charts with US scanning, clinical judgement/abdominal palpation?

Bibliographic reference	Reason for exclusion
Title: The fetal outcome in pregnancies with isolated reduced amniotic fluid volume in the third trimester Authors: Roberts D;Nwosu EC;Walkinshaw SA; Journal: Journal of Perinatal Medicine Year: 1998	Study not relevant for the guideline question
Title: Diagnosis of intrauterine growth retardation by a simple clinical method: measurement of uterine height Authors: Belizan JM;Villar J;Nardin JC;Malamud J;De Vicurna LS; Journal: American Journal of Obstetrics and Gynecology Year: 1978 Jul 15	Methodology (selection criterion, blinding) not described in details - better quality studies already included.
Title: Prediction of fetal growth deviation by ultrasonic biometry. II. Clinical application Authors: Eik Nes SH; Journal: Acta Obstetrica et Gynecologica Scandinavica Year: 1983	Study on the validation of a mathematical model for predicting birth weight.
Title: Estimation of fetal weight by external abdominal measurements Authors: Pschera H; Journal: Acta Obstetrica et Gynecologica Scandinavica Year: 1984	Study on correlation between uterine height and abdominal circumference versus fetal weight - data not extractable for predictive values.
Title: The precision and accuracy of symphysis-fundus distance measurements during pregnancy Authors: Bagger PV; Journal: Acta Obstetrica et Gynecologica Scandinavica Year: 1985	Population of pregnant women with complications - not relevant for the guideline question.
Title: Evaluation of symphysis-fundus measurements and weighing during pregnancy Authors: Jensen OH; Journal: Acta Obstetrica et Gynecologica Scandinavica Year: 1991	Retrospective review of case records, selection criterion not defined, blinding not specified - higher quality studies already included.
Title: Postnatal intestinal disturbances in small-for-gestational-age premature infants after prenatal haemodynamic disturbances Authors: Robel-Tillig E; Journal: Acta Paediatrica Year: 2000 Mar	Study not relevant for the guideline question.
Title: Identification of the small for gestational age fetus with the use of gestational age-independent indices of fetal growth Authors: Divon MY; Journal: American Journal of Obstetrics and Gynecology Year: 1986 Dec	Population of high risk pregnancies referred for further assessment - not relevant for the guideline question.
Title: Ultrasonographic identification of the macrosomic fetus Authors: Miller JM; Journal: American Journal of Obstetrics and Gynecology Year: 1988 Nov	Better quality diagnostic studies already included for the relevant test.
Title: Estimation of birth weight by use of ultrasonographic formulas targeted to large-, appropriate-, and small-for-gestational-age fetuses. Authors: Sabbagha RE; Journal: American Journal of Obstetrics and Gynecology Year: 1989 Apr	Retrospective study on application of new mathematical formulae for determining fetal weight - not relevant for the guideline question.
Title: Accuracy of ultrasonic fetal weight estimation and detection of small for gestational age fetuses Authors: Palo P; Journal: American Journal of Perinatology Year: 1989 Oct	Pregnant women admitted for suspected poor fetal growth - population not relevant for the guideline question
Title: The diagnostic efficacy of the umbilical arterial systolic/diastolic ratio as a screening tool: a prospective blinded study Authors: Maulik D; Journal: American Journal of Obstetrics and Gynecology Year: 1989	30% of study population with high risk pregnancies - population not relevant for the guideline question
Title: Is an abnormal Doppler umbilical artery waveform ratio a risk factor for poor perinatal outcome in the non-small for gestational age fetus? Authors: Yoon BH; Journal: American Journal of Perinatology Year: 1993 May	High quality Cochrane review already included for the effectiveness of Doppler

Bibliographic reference	Reason for exclusion
Title: Oligohydramnios and the appropriately grown fetus Authors: Garmel SH; Journal: American Journal of Perinatology Year: 1997 Jul	Study on adverse outcomes associated with oligohydramnios - not relevant for the guideline question
Title: Perinatal risks associated with borderline amniotic fluid index. Authors: Banks EH; Journal: American Journal of Obstetrics and Gynecology Year: 1999 Jun	Study not relevant for the guideline question
Title: Diagnosis of intrauterine growth restriction: Comparison of ultrasound parameters Authors: Ott WJ; Journal: American Journal of Perinatology Year: 2002	Pregnant women referred for risk factors of IUGR - population not relevant for the guideline question
Title: Estimation of fetal weight in utero from symphysis-fundal height and abdominal girth measurements Authors: Woo JS; Journal: Australian and New Zealand Journal of Obstetrics and Gynaecology Year: 1985 Nov	Development of new equation for EFW - not relevant for the guideline question
Title: Fetal growth and perinatal outcome of pregnancies continuing after threatened abortion Authors: Das AG; Journal: Australian and New Zealand Journal of Obstetrics and Gynaecology Year: 1996 May	Women with threatened abortion - population not relevant for the guideline question
Title: Use of umbilical-cerebral Doppler ratios in predicting fetal growth restriction in near-term fetuses Authors: To WWK; Journal: Australian and New Zealand Journal of Obstetrics and Gynaecology Year: 2005	Pregnant women admitted for suspected poor fetal growth - population not relevant for the guideline question
Title: Value of measuring the symphysis-fundus distance in diagnosis of intrauterine retardation of the fetus Authors: Kliment M; Journal: Bratislavske Lekarske Listy Year: 1983	Non-English article
Title: Ultrasound assessment of fetal growth Authors: Varma TR; Journal: BJOG: an International Journal of Obstetrics and Gynaecology Year: 1979 Aug	Population consist of women with suspected fetal growth retardation - not relevant for the guideline question
Title: Prediction of perinatal morbidity at term in small fetuses: comparison of fetal growth and Doppler ultrasound Authors: Chang TC; Journal: British Journal of Obstetrics and Gynaecology Year: 1994 May	Pregnant women with US confirmed small fetus - population not relevant for the guideline question
Title: The relation between fetal abdominal circumference and birthweight: Findings in 3,512 pregnancies Authors: Smith GCS; Journal: British Journal of Obstetrics and Gynaecology Year: 1997	Study on association between fetal abdominal circumference and birthweight - not relevant for the guideline question
Title: Doppler fetal circulation in pregnancies complicated by pre-eclampsia or delivery of a small for gestational age baby: 2. Longitudinal analysis Authors: Harrington K; Journal: BJOG : an international journal of obstetrics and gynaecology Year: 1999 May	High risk pregnant women - population not relevant for the guideline question
Title: Changes in vascular resistance in the umbilical and middle cerebral arteries in the human intrauterine growth-retarded fetus, measured with pulsed Doppler ultrasound Authors: Satoh S; Journal: Early Human Development Year: 1989 Dec	Study not relevant for the guideline question
Title: Normal fetal growth evaluated by longitudinal ultrasound examinations Authors: Larsen T; Journal: Early Human Development Year: 1990 Oct	Comparison of different equations for estimating fetal weight
Title: The neurodevelopmental outcome of term infants with different intrauterine growth characteristics Authors: Roth S; Journal: Early Human Development Year: 1999 May	Study on outcomes of growth restricted babies - not relevant for the guideline question
Title: Detection of small for gestational age fetuses by the combination of clinical risk factors and ultrasonography Authors: Rosendahl H; Journal: European Journal of Obstetrics Gynecology and Reproductive Biology Year: 1991	Study on predictive accuracy of risk factors and targeted US examination - not relevant for the guideline question
Title: Relationship between birth weight and umbilical Doppler blood flow velocity waveforms during the third trimester of pregnancy Authors: Bonnin P; Journal: European Journal of Medicine Year: 1993 Apr	Study not relevant for the guideline question
Title: The development of a local symphysis-fundal height chart in a rural area of Tanzania Authors: Walraven GEL; Journal: European Journal of Obstetrics Gynecology and Reproductive Biology Year: 1995	Development of a SFH chart using measurements from regional data - not relevant for the guideline question

Bibliographic reference	Reason for exclusion
Title: Optimal standards for fetal biometry: to each measurement its fitting model Authors: Pineau JC; Journal: Fetal Diagnosis and Therapy Year: 2006	Comparison of different mathematical models using two dimensions (abd circumference & femur length).
Title: Foetal growth parameters—clinical versus ultrasonographic Authors: Berry M; Journal: Indian Journal of Pediatrics Year: 1992 Jan	Study on development of normal fetal growth charts in India - not relevant for the guideline question
Title: Foetal growth as assessed by anthropometric measurements Authors: Lakshminarayana P; Journal: Indian Pediatrics Year: 1974 Dec	Development of new growth curve for IUGR babies - not relevant for the guideline questions
Title: Risk prediction charts for low birth weight Authors: Ghate M; Journal: Indian Pediatrics Year: 1996 Jan	Study on development of intrauterine growth monitoring charts
Title: The development and use of a standard symphysial-fundal height growth curve in the prediction of small for gestational age neonates Authors: Azziz R; Journal: International Journal of Gynecology and Obstetrics Year: 1988	Study on development and use of a new SFH chart for the local population - not relevant for the guideline question.
Title: Symphysis-fundal height measurement - A reliable parameter for assessment of fetal growth Authors: Indira R; Journal: International Journal of Gynecology and Obstetrics Year: 1990	Correlation of double abd wall thickness with SFH measurement - not relevant for the guideline question.
Title: Management of patients with poor symphysis pubis-fundus growth by Doppler flow velocimetry of the umbilical artery an effective method to detect the fetus at risk Authors: Theron GB; Journal: International Journal of Gynecology and Obstetrics Year: 1992	Study on diagnostic value of Doppler in women with poor SF growth - population not relevant for the guideline question.
Title: Validity of symphysis fundus growth measurements Authors: Cronje HS; Journal: International Journal of Gynecology and Obstetrics Year: 1993	Retrospective study, no blinding, selected population - better quality studies already included
Title: Clinical vs. ultrasound evaluation of fetal weight Authors: Banerjee K; Journal: International Journal of Gynaecology and Obstetrics Year: 2004 Jul	Study not relevant for the guideline question.
Title: The value of fundal height measurement in prediction of fetal growth retardation Authors: Cox G; Journal: Irish Medical Journal Year: 1983 Feb	Poor quality study
Title: Assessment of transverse abdominal diameter compared to abdominal circumference in a routine ultrasound screening Authors: Grange G; Journal: Journal D'Echographie et de Medecine Par Ultrasons Year: 1997	Non-English article
Title: Routine obstetric ultrasound: effectiveness of cross-sectional screening for fetal growth retardation Authors: Ferrazzi E; Journal: Journal of Clinical Ultrasound Year: 1986 Jan	Better quality studies already included for the relevant test
Title: Evaluation of three methods for estimating fetal weight Authors: Hill LM; Journal: Journal of Clinical Ultrasound Year: 1986 Mar	Comparison of three methods of estimating fetal weight - not relevant for the guideline question.
Title: Estimated fetal weight: applicability to small- and large-for-gestational-age fetus Authors: Miller JM; Journal: Journal of Clinical Ultrasound Year: 1988 Feb	Test to measure fetal weight - not relevant for the guideline question.
Title: Detection of intrauterine fetal growth retardation with abdominal circumference and estimated fetal weight using cross-sectional growth curves Authors: Simon NV; Journal: Journal of Clinical Ultrasound Year: 1990 Nov	Selected population, no blinding, retrospective study - better quality studies already included
Title: Menstrual age-dependent systematic error in sonographic fetal weight estimation: a mathematical model Authors: Mongelli M; Journal: Journal of Clinical Ultrasound Year: 2002 Mar	Modelling done for comparison
Title: A comparison of manual and ultrasound measurements of fundal height Authors: Euans DW; Journal: Journal of Family Practice Year: 1995 Mar	Correlation study between manual and US measurement of SFH
Title: 'Fetal growth charts': Comparison of cross-sectional ultrasound examinations with birth weight Authors: Bernstein IM; Journal: Journal of Maternal-Fetal Medicine Year: 1994	Comparison between two types of growth curves - not relevant for the guideline question.

Bibliographic reference	Reason for exclusion
Title: Abnormal Doppler flow velocimetry in the growth restricted foetus as a predictor for necrotising enterocolitis Authors: Bhatt AB; Journal: Journal of Postgraduate Medicine Year: 2002 Jul	High risk pregnant women - population not relevant for the guideline question
Title: Accuracy of estimating fetal weight by abdominal palpation Authors: Bossak WS; Journal: Journal of Reproductive Medicine Year: 1972 Aug	Data not extractable for 2 by 2 table.
Title: Normal uterine growth curve by measurement of symphysial-fundal height in pregnant women seen at Ramathibodi Hospital Authors: Linasmita V; Journal: Journal of the Medical Association of Thailand Year: 1984 Oct	Development of a SFH curve based on regional data - not relevant for the guideline question
Title: Serial symphysis-fundal height measurements in detection of abnormal fetal growth Authors: Linasmita V; Journal: Journal of the Medical Association of Thailand Year: 1986 Nov	Selection criterion not clear, population characteristics not clear, blinding not specified - 5 higher quality studies already included under this section
Title: Fundal height measurement as an antenatal screening method Authors: Ten WE; Journal: Journal of Tropical Pediatrics Year: 1985 Oct	Retrospective study, high drop out rate (> 75%), blinding not specified - higher quality studies already included
Title: The symphysis-fundus height graph and fetal growth retardation: gimmick or useful clinical tool? Authors: Kennedy I; Journal: Journal of Tropical Pediatrics Year: 1990 Feb	A literature review
Title: Role of umbilical Doppler velocimetry in the biophysical assessment of the growth-retarded fetus: Answers from neonatal morbidity and mortality Authors: Ferrazzi E; Journal: Journal of Ultrasound in Medicine Year: 1991	High risk pregnancies - population not relevant for the guideline question
Title: Normal ultrasonic fetal growth ratios evaluated in cases of fetal disproportion Authors: Crang-Svalenius E; Journal: Journal of Ultrasound in Medicine Year: 1991 Feb	Population of high risk women (fetus with growth disproportion) - not relevant for the guideline question
Title: Severity of polyhydramnios does not affect the prevalence of large-for-gestational-age newborn infants Authors: Lazebnik N; Journal: Journal of Ultrasound in Medicine Year: 1996 May	Population includes pregnant women with maternal diabetes - not relevant for the guideline question
Title: Intrauterine growth restriction and doppler ultrasonography Authors: Ott WJ; Journal: Journal of Ultrasound in Medicine Year: 2000	Comparison of pregnancy outcomes between SGA and IUGR babies - not relevant for the guideline question
Title: Intrauterine growth retardation—a prospective study of the diagnostic value of real-time sonography combined with umbilical artery flow velocimetry Authors: Divon MY; Journal: Obstetrics and Gynecology Year: 1988 Oct	Pregnant women with clinical suspicion of IUGR - population not relevant for the guideline question
Title: Prenatal surveillance using nonstress testing and Doppler velocimetry Authors: Farmakides G; Journal: Obstetrics and Gynecology Year: 1988	High risk pregnant women referred for NST and Doppler - population not relevant for the guideline question
Title: A combined historic and sonographic score for the detection of intrauterine growth retardation Authors: Hill LM; Journal: Obstetrics and Gynecology Year: 1989 Feb	Women with EFW < 10th centile for gestational age - population not relevant for the guideline question
Title: Outcomes of severely abnormal umbilical artery doppler velocimetry in structurally normal singleton fetuses Authors: Zelop CM; Journal: Obstetrics and Gynecology Year: 1996 Mar	Population of preterm pregnancies - not relevant for the guideline question
Title: A comparison of clinical and ultrasonic estimation of fetal weight Authors: Sherman DJ; Journal: Obstetrics and Gynecology Year: 1998 Feb	Data insufficient to calculate predictive values
Title: Effects of symmetric and asymmetric fetal growth on pregnancy outcomes Authors: Dashe JS; Journal: Obstetrics and Gynecology Year: 2000 Sep	Study not relevant for the guideline question
Title: Intrauterine blood flow and long-term intellectual, neurologic, and social development Authors: Wienerroither H; Journal: Obstetrics and Gynecology Year: 2001	Study not relevant for the guideline question
Title: Intrauterine growth and its relationship to size and shape at birth Authors: Hindmarsh PC; Journal: Pediatric Research Year: 2002 Aug	Study not relevant for the guideline question

Bibliographic reference	Reason for exclusion
Title: Estimated weight versus abdominal circumference in screening for fetal growth restriction: A mathematical model Authors: Mongelli M; Journal: Perinatology Year: 2003	Study not relevant for the guideline question
Title: Correlation between biomagnetic and Doppler findings of umbilical artery in fetal growth restriction Authors: Kotini A; Journal: Prenatal Diagnosis Year: 2003 Apr	Study not relevant for the guideline question - correlation of two tests
Title: Antenatal detection of small-for-gestational-age babies. Choice of a symphysis-fundus growth curve Authors: Pattinson RC; Journal: South African Medical Journal Year: 1988 Sep 17	Small sample size, no blinding, selected population - higher quality studies already included.
Title: Ultrasonic examination of the pregnant population in general practice Authors: Bratland SZ; Journal: Tidsskrift for Den Norske Laegeforening Year: 1985	Non-English article
Title: Estimation of fetal weight by ultrasonic measurement of several fetal growth parameters Authors: Sato A; Journal: Tohoku Journal of Experimental Medicine Year: 1985 Jul	Study not relevant for the guideline question - on a new formula for EFW
Title: The impact of adjustment for parity and mid-upper-arm circumference on sensitivity of symphysis-fundus height measurements to predict SGA fetuses in Mozambique Authors: Challis K; Journal: Tropical Medicine and International Health Year: 2003 Feb	Study not relevant for the guideline question
Title: The head-to-abdomen circumference ratio: a reappraisal Authors: David C; Journal: Ultrasound in Obstetrics and Gynecology Year: 1995	Study on significance of head-to-abdomen circumference ratio - not relevant for the guideline question
Title: Fetal weight gain in a serially scanned high-risk population Authors: De Jong CLD; Journal: Ultrasound in Obstetrics and Gynecology Year: 1998	Population of high risk pregnancies - not relevant for the guideline question
Title: Relationship between arterial and venous Doppler and perinatal outcome in fetal growth restriction Authors: Baschat AA; Journal: Ultrasound in Obstetrics and Gynecology Year: 2000 Oct	Study on relationship between Doppler and perinatal outcomes - not relevant for the guideline question
Title: Abdominal circumference: a single measurement versus growth rate in the prediction of intrapartum Cesarean section for fetal distress Authors: Williams KP; Journal: Ultrasound in Obstetrics and Gynecology Year: 2001 Jun	Study not relevant for the guideline question
Title: Multivariable analysis of tests for the diagnosis of intrauterine growth restriction Authors: Bachmann LM; Journal: Ultrasound in Obstetrics and Gynecology Year: 2003 Apr	Study evaluating predictive accuracy of a combination of tests
Title: Abnormal maternal cardiac function precedes the clinical manifestation of fetal growth restriction Authors: Vasapollo B; Journal: Ultrasound in Obstetrics and Gynecology Year: 2004 Jul	Comparison of maternal hemodynamics - not relevant for the guideline question
Title: Intrauterine growth restriction and fetal body composition Authors: Larciprete G; Journal: Ultrasound in Obstetrics and Gynecology Year: 2005	Study comparing body composition of IUGR babies vs those with normal growth - not relevant for the guideline question
Title: Use of ratios of head to abdomen circumference and biparietal diameter to femur length in monitoring of fetal growth retardation Authors: Gramellini D; Journal: Ultrasuoni in Ostetricia e Ginecologia Year: 1984	Non-English article
Title: Evaluation of gestational age based on ultrasound fetal growth measurements Authors: Varol F; Journal: Yonsei Medical Journal Year: 2001 Jun	Development of a new equation for monitoring fetal growth - not relevant for the guideline question



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Bibliographic reference	Reason for exclusion
Guinn D Wigton T Owen J et al Prediction of preterm birth in nulliparous patients. <i>American Journal of Obstetrics and Gynecology</i> . 1994; 171: 1111-1115.	Wrong intervention – not a risk assessment questionnaire.
Meis P Michielutte R Peters T et al Factors associated with preterm birth in Cardiff, Wales. <i>American Journal of Obstetrics and Gynecology</i> . 1995; 173: 597-602.	Does not address effectiveness or predictive accuracy of antenatal risk assessment.
Guthrie K Songane F Mackenzie F et al Audit of medical response to antenatal booking history. <i>British Journal of Obstetrics and Gynaecology</i> . 1989; 96: 552-556.	Does not address effectiveness or predictive accuracy of antenatal risk assessment.
Chng P Hall M MacGillivray An audit of antenatal care: the value of the first antenatal visit. <i>British Medical Journal</i> . 1980; 281: 1184-1186.	Does not adequately address effectiveness or predictive accuracy of antenatal risk assessment.
Lilford R and Chard T Problems and pitfalls of risk assessment in antenatal care. <i>British Journal of Obstetrics and Gynaecology</i> . 1983; 90: 507-510.	Theoretical paper.
Villar J Ba'aqeel H Piaggio G WHO antenatal care randomized trial for the evaluation of a new model of routine antenatal care. 2001; 357: 1551-1564.	Wrong intervention – not a risk assessment questionnaire. Low-income countries only.
Smith G Estimating risks of perinatal death. <i>American Journal of Obstetrics and Gynecology</i> . 2005; 192: 17-22.	Discussion paper on risk factors.
Fortney J and Whitehorne E The development of an index of high-risk pregnancy. <i>American Journal of Obstetrics and Gynecology</i> . 1982; 143: 501-508.	Description of risk modelling.
Weberling L Kirby Forgays D Crain-Thoreson C et al Prenatal child abuse risk assessment: a preliminary validation study. <i>Child Welfare</i> . 2003; 82: 319-333.	Does not address effectiveness or predictive accuracy of antenatal risk assessment.
Gupton A Heaman M and Cheung L Complicated and uncomplicated pregnancies: women's perception of risk. 2000; 30(2): 192-200.	Does not address effectiveness or predictive accuracy of antenatal risk assessment.
Boxall E and Smith N Antenatal screening for HIV; are those who refuse testing at higher risk than those who accept testing? <i>Journal of Public Health</i> . 2004; 26(3): 285-287.	Retrospective audit – does not address accuracy or effectiveness.
Stelmach T Kallas E Pisarev H et al Antenatal risk factors associated with unfavourable neurological status in newborns and at 2 years of age. <i>Journal of Child Neurology</i> . 2004; 19: 116-122.	Does not address effectiveness or predictive accuracy of antenatal risk assessment.
Ronsmans C Campbell O McDermott et al Questioning the indicators of need for obstetric care. <i>Bulletin of the World Health Organization</i> . 2002; 80(4): 317-324.	Describes worldwide service use.
Gunn J Hegarty K Nagle C et al Putting woman-centred care into practice: A new (ANEW) approach to psychosocial risk assessment during pregnancy. 2006. <i>Birth</i> ; 33(1): 46-54.	Does not address effectiveness or predictive accuracy of antenatal risk assessment.

Other NICE guidelines produced by the National Collaborating Centre for Women's and Children's Health include:

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- Urinary tract infection in children: diagnosis, treatment and long-term management
- Intrapartum care: care of healthy women and their babies during childbirth
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Enquiries regarding the above guidelines can be addressed to:

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