BCPHP Obstetric Guideline 19
MATERNITY CARE PATHWAY

February 2010

About The BC Maternity Care Pathway

This guideline is intended as a reference for best practice for routine prenatal care for all women in BC. It was developed in response to recommendations of the BC Maternity Care Enhancement Project (2004). This project called for the development of a woman-centered pathway to outline the care that a woman can expect to receive at each stage of her pregnancy.

The purpose of the pathway is to inform all care providers of the current evidence-based recommendations for routine care in pregnancy to ensure that all women in BC receive the same high standard of care regardless of their residence or service provider or special needs. The guideline is intended for use by physicians, midwives, nurses and other healthcare professionals who care for pregnant women. This document does not include guidelines for additional care that some women need.

The overarching philosophy represented in this guideline is that pregnancy is a normal physiological process and therefore any interventions offered should have known benefits and be acceptable to pregnant women.

A companion booklet, *Women's Health: Pregnancy Passport*, has been developed for pregnant women. The *Women's Health: Pregnancy Passport* provides women with the same best practice information about the care she can expect to receive during pregnancy, birth, and the early postpartum period. The aim is to support women to participate fully in their care in partnership with their care provider(s). The *Woman's Health: Pregnancy Passport* allows for personal documentation of a woman's visits to her care provider(s) and contains a list of resources for further information. The *Woman's Health: Pregnancy Passport* complements the book, *Baby's Best Chance* Parents Handbook of Pregnancy and Baby Care.[1]

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Who Designed this Pathway?

The BC Perinatal Health Program (BCPHP)[2] coordinated the development of this document. It represents a consensus opinion, based on best evidence, of an interdisciplinary team of BC healthcare professionals. The team included family physicians, midwives, obstetricians, acute care and public health nurses, clinical experts from the six BC Health Authorities and representatives of the Ministry of Healthy Living and Sport. The team wants to acknowledge the invaluable assistance they received by referring to a body of work produced by the UK National Institute for Health and Clinical Excellence (NICE).[3]

The quality of the recommendations in this guideline has been determined using the criteria described by The Canadian Task Force on Preventive Health Care (Table 1).[4]

Table 1
Levels of recommendations*

Recommendation A:	There is good evidence to recommend the clinical preventive action
Recommendation B:	There is fair evidence to recommend the clinical preventive action
Recommendation C:	The existing evidence is conflicting and does not allow to make a recommendation for or against use of the clinical preventive action; however, other factors may influence decision-making
Recommendation D:	There is fair evidence to recommend against the clinical preventive action
Recommendation I:	There is insufficient evidence (in quantity or quality) to make a recommendation; however other factors may influence decision making

*Recommendations included in these guidelines have been adapted from the Levels and Quality of Evidence for Treatment Recommendations described in The Canadian Task Force on Preventive Health Care[5]

Waiver

Any procedure or clinical practice described in the guideline should be applied by the health care provider under appropriate supervision in accordance with professional standards of care. Unique circumstances apply in each practice situation which requires sound clinical judgment. Care has been taken to describe generally accepted practices and accurate information as of publication date. However, the authors, editors, and publisher cannot accept any responsibility, and expressly disclaim all liability, including liability for negligence, errors, omissions, or any consequence from application of the information in this guideline. This guideline is provided as is, with no warranty, express or implied, with respect to the contents. The information provided in these materials is not a substitute for clinical judgment and should not be construed as clinical advice.

While every attempt has been made to ensure that the information contained herein is clinically accurate and current as of the publication date, the BCPHP acknowledges that many issues remain controversial, and therefore may be subject to practice interpretation. This guidance represents the view of BCPHP, which was arrived at after careful consideration of the available evidence. The guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Statement of Women-Centered Services

Women-centred services for maternity care should occur in the context of primary care with the recognition that "for the majority of women pregnancy and childbirth are normal life events. The mother and baby are placed at the centre of care, services are planned and provided to meet their needs. Providing women-centred services relies on understanding women's preferences and needs with respect to care. It also involves engaging women and their families (as defined by the woman) as partners in the processes of planning, delivering and evaluating services.[6]

Statement of Woman-Centered Care

Core principles of woman-centred care include respect, information sharing, participation and collaboration. Women, their partners and their families should always be treated with kindness, respect and dignity. The views, beliefs and values of the woman and her family in relation to her care and that of her baby should be sought and respected at all times. Women should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals.[7]

Guiding Principles for Care of Pregnant Women

Access: Provide a flexible, diversity-sensitive, high quality, accessible service. Women with limited social or financial means or geographic barriers to access, should be supported through innovative models of prenatal care.

Normal birth: Support and encourage confidence in normal birth and practices that promote minimal intervention.

Provider choice: Give information about local services and the care provided by family physicians, midwives, and obstetricians, and of where the option of home birth is available. Support women's right to choose her care provider.

Shared decision making: Enable women to make informed decisions based on their needs in partnership with their care providers in all aspects of pregnancy and fetal health. Respect and encourage women's own awareness of their health and of the well-being of their fetus. Assist women to make decisions and clarify the right of a woman to accept or decline any test or procedure.

Choice of Location and Method of Birth: Support women's right to choose how and where they give birth in consultation with care providers based on best evidence and available local resources.

Continuity of Care: Provide care by one person or a small team whenever possible. When possible, allow women the opportunity to meet other care providers who may attend the birth. When specialist consultation or transfer of care occurs, ensure complete and effective sharing of patient information between care providers with a system of explicit referral and communication pathways.

Team Work: Foster an interdisciplinary collaborative model of care with a clear understanding of all professional roles to maximize the quality and comprehensiveness of care.

Information Sharing and Informed Consent

Information should be provided that:

- Can be easily understood by all women including those with additional needs such as physical, sensory, or learning disabilities and women who do not speak or read English
- Is balanced and unbiased
- Reflects current evidence
- Is supported by written information and via different formats if available
- Is applicable to each woman's circumstances and setting for care
- Provides enough time and opportunity for discussion and questions to ensure the woman understands
- Informs women of the purpose of any test or intervention before it is performed
- Enables women to make informed decisions
- Fosters collaborative decision-making between the woman and the care-provider
- Respects a woman's decisions and choices, even if they differ from the caregiver's recommendations

Community Resources

Information should be provided that informs women about:

- Where she will be seen for prenatal care and by whom
- Where she will give birth and who her caregiver(s) in labour will be
- How to contact her caregiver in an emergency situation
- How to access prenatal education and breastfeeding information

Women Who May Need Additional Care

This pathway is designed for all pregnant women, most of whom are healthy.

Women with the following conditions in the current pregnancy may require additional care or services or referral to a specialist:

- Cardiac disease, including hypertension
- Renal disease
- Endocrine disorders or pre-existing diabetes
- Psychiatric disorders
- Haematological disorders
- Autoimmune disorders
- Pharmacological therapy (anti-depressants, anticonvulsants etc.)
- History of infertility or assisted reproductive technology
- Multiple pregnancy
- Pre-eclampsia
- Gestational diabetes requiring insulin
- Use of substances such as tobacco, alcohol, heroin, marijuana, cocaine, ecstasy and amphetamines
- Obesity (pre-pregnancy body mass index >30)
- Underweight (body mass index below <18.5)
- Women who are particularly vulnerable (such as adolescents, women living in poverty or women with language barriers) who lack social support
- Women exposed to intimate partner violence (IPV)
- Malignant disease
- Chronic infections (HIV, Hep C, HSV, Hep B, etc.)
- Chronic medical/surgical disorders (epilepsy, severe asthma, lupus, etc.)
- Advanced maternal age (>40)
- Other conditions determined by the care provider

Women who have experienced any of the following in previous pregnancies may require additional care:

- Recurrent miscarriage
- Preterm birth
- Pre-eclampsia, HELLP syndrome or eclampsia
- Rhesus isoimmunisation or other significant blood group antibodies
- Gestational diabetes requiring insulin
- Puerperal psychosis
- Grand multiparity (given birth more than 6 times)
- A stillbirth or neonatal death
- A small-for-gestational-age infant (below 10th percentile)
- A large-for-gestational-age infant (above 90th percentile)
- A baby with a congenital abnormality (structural or chromosomal)
- Uterine surgery (e.g. Caesarean section, myomectomy, cone biopsy, or LEEP)
- Antenatal or postpartum haemorrhage
- Other conditions determined by the care provider

Preconception (for all women of reproductive age)

Give information on:

- The benefits of a planned pregnancy and general good health
- Folic acid supplementation as per patient risk [8] (0.4 mg – 5 mg per day pre pregnancy)*
- Vitamin supplementation[9]
- Healthy diet[10]
- Food safety and how to reduce the risk of a food acquired infection*
- Weight management including healthy pre-pregnant weight (BMI of 19 – 27) and risks associated with underweight, overweight and obesity[11,12]
- Physical activity[13]
- Contraception choices that meet timing of desired pregnancy
- Genetic counselling/testing as appropriate (such as Ashkenazi Jewish Panel, Thalassemia, Sickle Cell Anemia)[14]
- Use of medications and supplements*
- Lifestyle: including smoking cessation, alcohol consumption, substance use and Fetal Alcohol Spectrum Disorder (FASD) prevention*
- History of communicable disease: including rubella susceptibility, varicella, sexually transmitted infections, HIV, Herpes in woman and her partner(s)*
- Healthy sexuality*
- Appropriate specialist referrals for women with chronic medical conditions to allow for pre-pregnancy assessment and planning
- Impact and implications of past obstetrical history on future pregnancies (i.e. prior preterm birth, prior still birth, prior cesarean birth)
- Impact and implications of past gynecological history on future fertility and future pregnancies (i.e. cone biopsy, fibroids, PCOS)
- Impact of pregnancy on women with a chronic medical condition (physical or mental)
- Identification of additional resources needed for women with a chronic medical condition (physical or mental)

*For more detail, refer to pages 16-20

Routine Pregnancy Care Schedule

Documentation of Care

The British Columbia Antenatal Record Part 1 and Part 2[15]

A. Early Prenatal Care 0 – 14 weeks (Usually requires more than one vist)

TIME SENSITIVE

- Prenatal genetic screening for aneuploidy should be offered to all women in BC. Individualized discussion should include risks, benefits, outcomes and access [16]
- Folic Acid supplementation: Recommend - 0.4 mg – 1 mg per day; 5 mg per day for at risk women (such as anticonvulsants, previous infant with spina bifida, pre-existing diabetes, challenges with healthy eating)[17]
- Estimate due date using history. Offer early ultrasound to all women, ideally between 11 and 14 weeks, as it is a more accurate assessment of gestational age than last menstrual period with fewer pregnancies prolonged past 41^{+0} weeks.[18,19] If women qualify for NT ultrasound, the ultrasound will also confirm the due date
- Review use of medications and supplements
- Counsel all women for alcohol use. Assess for risk, discuss alcohol cessation/reduction, and refer to local supports/resources as needed. Administer the TWEAK assessment and record on the Antenatal Record[20, 21]
- Screen all women for tobacco use and exposure. Counsel women on effects of smoking in pregnancy and discuss cessation strategies, refer to specialized counselling and quit smoking resources. Consider and discuss the benefits of nicotine replacement therapy with women who smoke more than 10 cigarettes a day and who have not quit by 12 weeks of pregnancy[22]
- Screen all women for substance use. Refer to specialized services and resources as appropriate

Counselling Women for Genetic Screening

Women should be directed to the BC Prenatal Screening website for a thorough explanation of options for testing and how they might respond to a positive result to complement counselling from a health professional. http://www.bcprenatalscreening.ca/page179.htm

Women should understand that it is their choice to undertake screening for these syndromes. Information about prenatal screening for Down syndrome, trisomy 18, and Open Neural Tube Defect should be given to pregnant women at the first contact with a healthcare professional. This will provide the opportunity for further discussion before embarking on screening and ensure that the appropriate early tests are performed if the woman wishes. Specific information should include:

- The age-based risk for each woman for having a fetus with Down syndrome, trisomy 18, and Neural Tube Defect
- The available tests for each woman depending on her age and local and distant services
- The screening pathway for both screen positive and screen negative results
- The decisions that need to be made at each point along the pathway and their consequences
- The fact that screening does not provide a definitive diagnosis and a full explanation of the risk score obtained following testing
- Information about chorionic villous sampling and amniocentesis including the risks of these procedures
- Balanced and accurate information about Down syndrome

Women with a screen positive result should have rapid access to further counselling with a knowledgeable practitioner.[23]

SIPS	Serum Integrated Prenatal Screen	**NT**	Nuchal Translucency
IPS	Integrated Prenatal Screen	**CVS**	Chorionic villus sampling
QUAD	Measurement of second trimester serum quad markers (AFP, uE3, hCG and inhibin-A) in one blood test		

Brief Summary of Prenatal Genetic Screening Options in BC (2009):

- **Women less than 35 years of age:** Offer Serum Integrated Prenatal Screen (SIPS): Part 1 at 10 – 13^{+6} weeks and Part 2 at 15 – 20^{+6} weeks. Results will be reported only after completion of both tests. Accurate dating of pregnancy is important and early dating US at 10 – 11 weeks is helpful. For women who access care after 13 weeks gestation offer Quad screening (between 15 – 20^{+6} weeks). Offer women who access care at 15 – 20^{+6} weeks Maternal Serum AFP only.
- **Women age 35-39:** Offer Integrated Prenatal Screening (IPS = SIPS plus Nuchal Translucency) if NT is available. Timeframe for NT is 11–13^{+6} weeks (optimum 12–13^{+3} weeks). If NT is not available offer SIPS. Women age 35-39 are no longer offered amniocentesis without prior serum screening unless they present late in the pregnancy for care. For women who present for care after 21 weeks with no prior screening offer detailed US and amniocentesis.
- **Women age 40 or more:** Offer any one of: SIPS, IPS , CVS or amniocentesis depending on local resources and the woman's preference.
- **All women:** Offer detailed US at 18 – 20 weeks.
- **Women with multiple gestation:** offer IPS if available and under 13^{+6}, or if not available offer SIPS; if presenting later than 13^{+6} offer Quad. Offer amniocentesis to women with screen higher than cut off, or age 35 or older.
- See below for more details.

Detailed Summary of Prenatal Genetic Screening Options in BC

Screening Options Available Through the BC Prenatal Genetic Screening Program[24]			
Characteristics of Woman	**Gestational Age at the First Prenatal Visit**		
	<13+6 Weeks	**14 – 20+6 Weeks**	**>21 Weeks (no prior screening)**
<35 years	• SIPS (if patient is HIV+ & NT is available, IPS)	• Quad	• Detailed ultrasound
35 – 39 years	• SIPS; or • If NT available, IPS	• Quad	• Detailed ultrasound; and • Amnio
40+ years	• SIPS; or • If NT available, IPS; or • CVS or amnio without prior screening	• Quad; or • Amnio without prior screening	• Detailed ultrasound; and • Amnio
Personal/family history that increases risk of fetus with Down syndrome or trisomy 18	• SIPS; or • If NT available, IPS; or • CVS or amnio without prior screening	• Quad; or • Amnio without prior screening	• Detailed ultrasound; and • Amnio
Personal/family history that increases risk of fetus with chromosomal abnormality other than Down syndrome or trisomy 18	• CVS or amnio without prior screening	• Amnio without prior screening	• Detailed ultrasound; and • Amnio
Multiple gestation	• If NT available, IPS; or • If NT not available, SIPS or if >35, amnio without prior screening	• Quad; or • If >35, amnio without prior screening	• Detailed ultrasound; and • If >35, amnio

This guideline is being progressively implemented as NT ultrasound capacity develops throughout the province. SIPS is now available to all pregnant women. Eligibility for IPS is changing[25] and includes pregnant women 36 years or older. When sufficient NT capacity has been developed, women 35 years old will be included. Notification will be sent when the eligible age is reduced to 35 years old.

Positive Results

- If the prenatal screen result is screen positive for Down syndrome (assuming date is confirmed) or trisomy 18, women should be counselled by their health care practitioner and offered further diagnostic testing (e.g. amniocentesis).
- If the prenatal screen result is screen positive for an open neural tube defect (assuming date is confirmed), women should be referred to Medical Genetics or offered a detailed ultrasound, counselling, and if indicated diagnostic testing.

Resources for Genetic Counselling (Medical Genetics)

- Website: http://www.bcprenatalscreening.ca/page179.htm
- Complete guideline: http://www.bcprenatalscreening.ca/sites/genetic/files/Prenatal_Screening_Guideline.pdf
- Telephone in Victoria: (250) 727-4461; Fax for referrals: (250) 727-4295
- Telephone in Vancouver: (604) 875-2157; Fax for referrals: (604) 875-3484
- Questions about prenatal screening in BC: Prenatal Biochemistry Laboratory: (604) 875-2331 (0800-1600 hrs, M-F)

First or subsequent pregnancy visits

i) Review History and Perform Physical Exam

- Discuss options for maternity care and the woman's preference. Make referrals as appropriate
- Discuss woman's adjustment to pregnancy (mood, work, stress, family)
- Review health history and complete Part 1 on the Antenatal Record
- Record height and weight and calculate pre-pregnancy BMI
- Identify women who may need additional care and discuss plan of care
- Discuss lifestyle, including use of tobacco, alcohol, and other substances
- Review sexual history and identify related risk factors
- Discuss financial, housing and other support
- Discuss nausea, vomiting and fatigue
- Discuss the importance of good oral hygiene, accessing early preventive dental care and safety of treatment during pregnancy[26]
- Offer seasonal flu vaccine if available
- Perform complete physical examination including pelvic exam

ii) Offer diagnostic / screening tests:

Screening Test	Recommendation	Level of Recommendation / Comment	
Blood group, rhesus D status and red cell antibodies	Recommend in every pregnancy within the first trimester and again at 28 weeks in Rh negative women with only one previous type and screen done by Canadian Blood Services [27]	C	Screening to prevent hemolytic disease of the newborn (e.g. from rhesus isoimmunization) Lab testing results from Canadian Blood Services will indicate when subsequent testing is necessary http://www.sogc.org/guidelines/public/133E-CPG-September2003.pdf
Hb, MCV	Recommend	B	Screening for both Fe deficiency anemia and hemoglobinopathy If CBC is abnormal, investigate for iron deficiency anemia (ferritin) and hemoglobinopathy (Hb electrophoresis) Consider consultation with hematologist Consider screening father for hemoglobinopathy (CBC)[28]
HIV	Recommend	A	Screening for HIV to guide care and prevention of fetal transfer
Rubella antibody titre	Recommend if no known history of disease or immunization	B	In all women for baseline in early pregnancy if exposed and non immune, and to guide recommendation regarding postpartum vaccination for prevention in subsequent pregnancy http://www.sogc.org/guidelines/documents/guiJOGC203CPG0802.pdf http://www.cdc.gov/vaccines/pubs/preg-guide.htm
Hepatitis C testing	Recommend screening to women with risk factors: • injection drug use (even once) • hemodialysis • persistent elevated AST • receipt of blood products or organs before 1992 or clotting factors before 1988 • exposure to blood of high-risk individual • prison inmates • HIV positive • tattoos not carried out in properly regulated premises	A	http://www.sogc.org/guidelines/public/96E-CPG-October2000.pdf
Standard Test for syphilis (STS)	Recommend in every pregnancy	A	Screening for diagnosis and treatment/prevention/follow up of treatment Canadian Guidelines on Sexually Transmitted Infections[29]
Hepatitis B surface antigen	Recommend	A	Screening for guiding investigation of mother regarding liver function and care of newborn (vaccination at birth)
Other investigations: such as parvovirus B19 serology (B19, IgG and IgG), mumps, CMV	Routine screening for Toxoplasmosis, B19, mumps should not be done Offer serology testing to women exposed to or with symptoms of parvovirus, mumps or CMV to determine prior immunity (IgG) or current infection (IgM)	I B	SOGC Parvovirus B19 Infection in Pregnancy http://www.sogc.org/ guidelines/public/119E-CPG-September2002.pdf Specimens for rubella are held in Provincial Lab for 1 year – can request these other tests to be done if indicated without obtaining a second sample

Screening Test	Recommendation	Level of Recommendation / Comment	
Chlamydia screening	Offer screening to all women Recommend screening to women with increased risk factors[30]	B	http://www.phac-aspc.gc.ca/std-mts/sti-its/pdf/502chlamydia-eng.pdf http://www.bccdc.org/downloads/pdf/std/BC%20STI%20Guidelines%202007.pdf http://www.ctfphc.org/
Gonorrhoea screening	Offer screening to all women Recommend screening to women with increased risk factors[31]	A	http://www.phac-aspc.gc.ca/std-mts/sti-its/pdf/506gonococcal-eng.pdf http://www.bccdc.org/downloads/pdf/std/BC%20STI%20Guidelines%202007.pdf http://www.ctfphc.org/
Midstream urine for C&S	Recommend screening for asymptomatic bacteruria in early pregnancy and screening in each trimester in women with know history of recurrent UTI	A C	http://www.sogc.org/jogc/abstracts/200501_Obstetrics_2.pdf
GTT or Fasting Blood Glucose	Offer to diagnose (case finding) Type 2 Diabetes for patients with risk factors: obesity and/or strong family history	A	Canadian Diabetes Association (CDA) recommends 75gm GTT for diagnosing Type II diabetes http://www.diabetes.ca/files/cpg2008/cpg-2008.pdf http://www.healthypregnancybc.ca
Thyroid Stimulating Hormone	Offer to all women Recommend to women with a history or symptoms of thyroid disease or other conditions associated with thyroid disease	B	Subnormal levels in early pregnancy have been associated with damage to fetal intellectual development. http://www.endo-society.org/guidelines/Current-Clinical-Practice-Guidelines.cfm
Pap Test	Offer Pap testing if indicated	B	http://www.sogc.org/guidelines/public/144E–JPS-March2004.pdf
TWEAK screening for pregnancy risk-drinking	Recommend screening questionnaire	B	Motherisk uses the TWEAK screening for assessing pregnancy risk-drinking Screening is most sensitive for women interviewed during the first 15 weeks of pregnancy[32] http://www.motherisk.org/women/index.jsp

iii) Provide information on:

- How to access *Baby's Best Chance* and *Women's Health: Pregnancy Passport*
- Prenatal education
- Substance use (alcohol, tobacco, drugs – illicit and prescription – and harm reduction strategies)
- Intimate partner violence (IPV)
- Healthy weight gain (online resources www.healthypregnancyBC.ca)
- Healthy eating (including limiting caffeine intake)
- Physical activity, rest and work
- Food hygiene, including how to reduce the risk of a food acquired infection
- Discomforts of early pregnancy such as: nausea, vomiting, constipation and fatigue
- Occupational hazards
- Motor vehicle safety, safe seat belt use
- Benefits of breastfeeding
- Planning place of birth
- Labour support and doula care
- Early pregnancy loss (miscarriage).

For further information, see **Lifestyle Advice and Recommended Websites for Women**, pages 16 – 20.

B) Routine Prenatal Care at each Appointment

The routines listed below are common practice in BC and have been adapted from the *American Family Physician* recommendations.[33] Some of these procedures may be lacking evidence or under investigation for merit, thereby controversial at this time. BCPHP will continue to monitor evidence and provide recommended changes as new evidence indicates.

Procedure	Recommendations	Level of Recommendation / Comments	
Blood pressure		C	To detect change indicative of hypertensive disease in pregnancy
Assess Fetal Movement	Recommend that healthy women without risk factors for adverse perinatal outcomes be aware of fetal movements beginning at 26-32 weeks and to perform a fetal movement count if they perceive decreased movements	B	SOGC / BCPHP Guidelines http://www.bcphp.ca//sites/bcrcp/files/Guidelines/Obstetrics/Guideline_6.pdf
	Recommend daily fetal movements counting starting at 26 weeks to 32 weeks in all pregnancies with risk factors for adverse outcomes, and	A	
	recommend that women who do not perceive six movements in an interval of two hours seek further antenatal testing as soon as possible	B	
Fetal heart tones	Offer at each visit, to confirm a viable fetus.	C	No evidence of other clinical or predictive values Believed to provide psychological support to the mother and enhance maternal bonding
Symphysis-fundus height	Recommend measuring from symphysis pubis to top of the fundus in centimetres. Plot on graph in Antenatal Record	B	Plotting SFH on the graph is more effective in identifying variances in growth

Procedure	Recommendations	Level of Recommendation / Comments	
STIs	Recommend rescreening in each trimester for women with ongoing risk factors for STI aquisition: Hep B, Hep C, HIV, chlamydia, syphilis, gonorrhea[34]	B	Canadian Guidelines on Sexually Transmitted Infections http://www.phac-aspc.gc.ca/std-mts/sti-its/guide-lignesdir-eng.php
Urinary dipstick testing for proteinuria	Recommend all pregnant women be assessed for proteinuria in early pregnancy to screen for preexisting renal disease	B	Urine dipstick for protein is more accurate when the dipstick is performed in a laboratory, and when the value is plus 3 or plus 4
	Recommend urinary dipstick testing for screening for proteinuria when the suspicion of preeclampsia is low	C	Urinary dipstick testing is inexpensive, easy, and widely used. Its usefulness is uncertain for screening either women with hypertension or those who are at increased risk of preeclampsia. A negative or trace value should not be ignored in a woman with new hypertension or symptoms or signs suggestive of preeclampsia; 12% of negative / trace results will be false negatives as assessed against 24-hour proteinuria of 0.3 g/d, and, regardless, these women may have preeclampsia without proteinuria[35]
	Recommend more definitive testing for proteinuria (by urinary protein: creatinine ratio (UPCR) or 24-hour urine collection) when there is a suspicion of preeclampsia	A	For the detection of significant proteinuria, a urinary protein creatinine ratio (UPCR) is preferred and is the diagnostic test of choice to confirm significant proteinuria found by other screening tests SOGC: Diagnosis, Evaluation, and Management of the Hypertensive Disorders of Pregnancy[36]
Weight measurement	Recommend for women who are underweight or overweight. Monitor weight relative to the individual goal	I	Most women like to discuss healthy weight gain and activity throughout pregnancy[37]
	Consider recommending little to no weight gain for obese women	B	Some women may not wish to be weighed regularly. Since the evidence for any benefit is not strong, the woman's preference should be a consideration[38] The evidence is mounting that obese women should gain little if any weight. The new Institution of Medicine guidelines may still be too generous[39]

C) Routine Care at 15 – 20 Weeks

TIME SENSITIVE

15 – 17 weeks
Prenatal genetic screening refer to pages 7 – 8

18 – 20 weeks
Offer detailed ultrasound[40]

- Routine care as outlined in section B
- Follow-up of all tests / interventions
- Promote normal birth
- Recommend VBAC for women who are appropriate candidates.[41] Counsel and provide informed consent about the health risks and benefits of VBAC, including success factors (prior vaginal delivery, prior VBAC and non recurring indication) and risk factors (41 weeks or more, need for cervical ripening, single-layer closure and short inter-delivery interval of <24 months).[42, 43, 44, 45, 46, 47] A thorough discussion of local resources with informed consent should occur. Early discussion of VBAC in appropriate candidates increases planned VBAC.

D) Routine Care at 20 – 27 Weeks

TIME SENSITIVE

24 – 26 weeks
Offer repeat Rh antibody titre in Rh negative women
Consider screening for Gestational Diabetes[48]

- Perform routine care as outlined in B
- Follow-up of all tests / interventions
- Forward a copy of completed Antenatal Record (Part 1 & 2) to hospital

Provide information on:

- Signs and symptoms of preterm labour and what to do if the woman suspects she is in preterm labour
- Breastfeeding: benefits for infant and mother, recommendation of exclusive breastfeeding for six months
- Transfer of care / consultations if needed
- Travel to another community for birth if appropriate

E) Routine Care at 28 – 36 weeks

TIME SENSITIVE

Week 28
Offer Rh Immunoglobulin to un-sensitized Rh negative women with informed consent (blood product)

Weeks 28 – 32
Administer Edinburgh Postnatal Depression Scale

Week 34
Assess fetal presentation, consider external cephalic version (ECV) if available[49]

Weeks 35 – 37
Offer Group B Strep screening – NB: **request bacterial sensitivity if patient is penicillin allergic and at risk for anaphylaxis**[50] with copy to the planned hospital
Offer suppression therapy for women with history of recurrent HSV[51]

- Perform routine care as outlined in section B
- Discuss woman's adjustment to pregnancy (mood, work, stress, family)
- Follow-up of all tests/ interventions
- Repeat STI screening on women with increased risks
- Reassess diet, tobacco, alcohol and substance use, physical activity
- Antepartum non stress testing may be considered when adverse perinatal outcomes are present (B)[52]
- Offer anaesthesia consult if BMI >38 pre-pregnancy or at first prenatal visit[53] (check with local anaesthetist about other reasons for referral)
- Review options for VBAC if applicable. Re-evaluate risk and potential for success

Provide information on:

- Options for testing and treatment for GBS
- Normal birth[54]
- Preparation for labour (including latent phase) and birth including the woman's preferences, recognition of the signs of active labour and coping with pain
- Variations from normal birth and possible interventions

- Labour support and doula[55] care
- On-call arrangements, when and who to call when in labour
- Postnatal self-care, awareness of 'baby blues' and postnatal depression

Procedure/Test	Recommendation	Level of Recommendation / Comments	
Blood group, rhesus D status and red cell antibodies	Recommend for every pregnancy within the first trimester and again at 28 weeks in Rh negative women with only one previous type and screen done by Canadian Blood Services[56]	C	Screening to detect hemolytic disease of the newborn from rhesus isoimmunization Lab testing results from Canadian Blood Services will indicate when subsequent testing is necessary http://www.sogc.org/guidelines/public/133E-CPG-September2003.pdf
CBC, HgB, MCV	Offer re-screening for anaemia If HgB less than 105g/l investigate and consider iron supplements	C	http://www.cochrane.org/reviews/en/ab003094.html
1-hour 50-g glucose screen for gestational diabetes (GDM)	Offer screening for gestational diabetes. The discretion to screen and how to screen is at the discretion of the care provider and the woman given the current lack of evidence for any one approach	I C D C	Current evidence for benefit is lacking SOGC recommends any one of the following: 1. screening all patients 2. case finding: screen high risk women only 3. no screening[57] Canadian Diabetic Association recommends: 1. universal screening between 24 and 28 weeks' gestation 2. if multiple risk factors for GDM present, screening during first trimester and reassess during subsequent trimesters 3. confirmation of GDM with 75gm GTT[58]
Edinburgh Postnatal Depression Scale (EPDS)	Recommend the EPDS be administered to all women between 28-32 weeks	B	Detecting depression, and providing appropriate treatment and support at this stage is correlated with a reduction of postnatal depression. Screening at this time also provides opportunity to link women at risk of depression with appropriate care providers and supports[59] http://www.health.gov.bc.ca/library/publications/year/2006/MHA_PerinatalDepression.pdf
Vaginal anal swab for GBS	Offer all women screening for presence of group B streptococcus (GBS) to determine carrier status	B	Request bacterial sensitivity if patient is penicillin allergic and at risk for anaphylaxis If woman has had a previous baby affected by GBS or GBS bacteriuria in this pregnancy a recto vaginal screen is not indicated. Patient is considered to be GBS+ [60]
Suppressive therapy for recurrent genital HSV	Recommend Valacyclovir 500 mg BID from 36 weeks to delivery or Acyclovir 400 mg TID	A	http://www.sogc.org/guidelines/documents/gui208CPG0806.pdf
ECV for Breech Presentation	Confirm presentation with detailed ultrasound at 34 weeks. Offer ECV if available	A	If ECV unsuccessful, consider if woman is an appropriate candidate for Breech Vaginal Delivery based on resources, woman's preference and other risk factors[61]

F) Routine Care at 37 – 41 weeks

Time Sensitive
Review and discuss Group B Strep screening results and options for antibiotic prophylaxis in labour

- Routine care as outlined in section B
- Follow-up of all tests/interventions
- Discuss woman's adjustment to pregnancy (mood, work, stress, family)

Provide information on:

- Stillbirth and risk factors (gestational diabetes requiring insulin, and advanced maternal age >40 years)
- Induction of labour, risks and benefits based on current clinical situation
- C/S and VBAC, as needed
- Options for management of prolonged pregnancy such as sweeping of membranes
- Postnatal self-care and support, awareness of 'baby-blues' and postnatal depression
- Breastfeeding: the importance of feeding early, often and exclusively
- The benefits to the infant of skin-to-skin contact in the first hour of life: improves thermal regulation, decreases morbidity and mortality of infant and increases initiation and duration of breast feeding[62, 63]
- Newborn care including eye prophylaxis, vitamin K prophylaxis and newborn screening tests (such as blood spot screening, NB hearing screening)
- "Back to sleep" for infant sleep position[64,65]
- Infant safety – such as a safe sleeping environment,[66] infant crying, prevention of shaken baby syndrome and infant car seats

G) 41^{+} weeks

- Further discussion of management of prolonged pregnancy
- In the case of a post-date pregnancy, the option of induction at 41^{+0} to 42^{+0} weeks should be discussed with the woman, taking into account the favourability of the cervix, risk and benefits associated with induction or awaiting spontaneous labour[67]
- If induction is declined, increase fetal surveillance including amniotic fluid assessment, non-stress testing and fetal movement counting beginning at 41 weeks

Procedures / Interventions Not Routinely Recommended

This section of the document only includes interventions formerly routinely practised that evidence now demonstrates a negative outcome for the patient and/or fetus.

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- Routine urine dipstick testing for glycosuria is not recommended. It has high specificity but a low sensitivity. In general if there is low sensitivity it does not make a good screening test.[68]
- Routine testing for Bacteria Vaginosis (BV) is not recommended. Asymptomatic women and women without identified risk factors for preterm birth should not undergo routine screening for or treatment of bacterial vaginosis (B).[69]
- Routine screening for toxoplasmosis, B19 and mumps is not recommended (B).[70]

Lifestyle Advice

The information listed below has been adapted from the *American Family Physician* recommendations for practices in BC[71]. The evidence in these studies has not been graded using the criteria described by The Canadian Task Force on Preventive Health Care (Table 1).

Refer to the reference article for details re levels of evidence used.

Topic	Overview/Comments	References
Air Travel	Advise women air travel is safe until 36 weeks; long-haul flights (over 6 hours) are associated with increased risk of venous thrombosis[72] Consider safety of destination and duration of travel	http://wwwn.cdc.gov/travel/yellowBookCh9-PregnancyTraveling.aspx
Car travel	Advise women to always wear seat belts in the car. Wear the lap belt snug and low over the pelvic bones, below the baby; the shoulder belt should be worn tightly against the chest Advise women not to put the shoulder belt under the arm or behind the back Advise women not to recline the seat while travelling because the seat belt will be too loose to provide proper protection[73] Advise women not to be the driver if she doesn't have to be. If she does drive, advise her to adjust the vehicle's front seat as far back as possible; this gives the air bag as much room as possible in which to inflate if there is a crash	http://www.icbc.com/road_safety/pdf/Road_Safety_Seatbelts_TS274S.pdf
Dental Health	Recommend women have dental care early in pregnancy and continue as necessary. The current Cochrane review concludes there is some preliminary evidence to suggest that periodontal intervention may reduce adverse pregnancy outcomes.[74] Reducing high levels of *S. mutans* by removing active decay and improving mother's oral hygiene before her baby is born prevents or delays infection of her infant[75]	*Babies Best Chance* http://www.health.gov.bc.ca/library/publications/year/2005/babybestchance.pdf

Topic	Overview/Comments	References
Physical activity, rest and relaxation	Advise women to refer to the Healthy Pregnancy BC website, a BC online resource developed for women Recommend women start or continue moderate physical activity. Sports that may cause abdominal trauma, falls, excessive joint stress, and scuba diving should be avoided. Heat exposure such as hot tubs and saunas should be avoided throughout pregnancy Discuss the importance of adequate rest and relaxation for overall well-being	www.healthypregnancyBC.ca http://www.phac-aspc.gc.ca/hp-gs/know-savoir/phys-eng.php http://www.sogc.org/guidelines/public/129E-JCPG-June2003.pdf www.motherisk.org or 1-877-327-4636 http://www.hc-sc.gc.ca/hl-vs/sex/index-eng.php
Hair treatments	"Use of hair products is unlikely to cause adverse fetal effects. With occupational exposure of hairdressers, the evidence suggests minimal systemic exposure to hair products; however, it is recommended that hairdressers wear gloves to minimize exposure, work for less than 35 hours per week, and avoid standing for prolonged periods of time. For the average pregnant woman, receiving hair treatments 3 to 4 times during pregnancy does not appear to increase risk of adverse effects on the fetus"[76]	Canadian Family Physician – Motherisk Update http://www.cfp.ca/cgi/content/full/54/10/1386
Healthy Eating	Advise women to refer to Healthy Pregnancy BC, a BC online resource for women related to healthy eating and healthy weight gain	*Babies Best Chance* www.healthypregnancyBC.ca Dial-A-Dietitian: Greater Vancouver (604) 732-9191, Toll free in BC 1-800-667-3438. Web: http://www.dialadietitian.org/ HealthLink BC: Phone: 8-1-1 Web: http://www.healthlinkbc.ca/diet.stm
	Eating Well with Canada's Food Guide	http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/index-eng.php
	Health Canada Food and Nutrition – Pregnancy Nutrition	http://www.hc-sc.gc.ca/fn-an/nutrition/prenatal/index-eng.php
	My Food Guide is an interactive tool that will help women personalize the information found in Canada's Food Guide	http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/myguide-monguide/index-eng.php
Healthy Weight	Advise women to refer to the Healthy Pregnancy BC website, a BC resource developed for women on healthy weight, healthy weight gain, BMI calculation; plus resources for caregivers including the background paper *Maternal Overweight, Obesity, and Excess Gestational Weight Gain*	www.healthypregnancyBC.ca BMI calculator: http://www.hc-sc.gc.ca/fn-an/nutrition/weights-poids/guide-ld-adult/bmi_chart_java-graph_imc_java-eng.php
Intimate Partner Violence (IPV)	Evidence suggests that IPV may first occur or increase during pregnancy	http://www.bcphp.ca//sites/bcrcp/files/Guidelines/Obstetrics/IPVJuly2003Final.pdf http://www.cd.gov.bc.ca/women/contacts/th.htm

Topic	Overview/Comments	References
Food Safety	Recommend attention to food hygiene to reduce the risk of a food acquired infection including listeriosis and toxoplasmosis. Recommend avoidance of fish containing high mercury content	*Babies Best Chance* Listeriosis: http://www.healthlinkbc.ca/healthfiles/hfile75.stm Toxoplasmosis: http://www.healthlinkbc.ca/kbase/topic/major/tn7481/descrip.htm Fish low in mercury: http://www.healthlinkbc.ca/healthfiles/hfile68m.stm http://www.hc-sc.gc.ca/fn-an/nutrition/prenatal/national_guidelines-lignes_directrices_nationales-06g-eng.php#4
Medications, over the counter, herbal	Risks and benefits for individual medications should be reviewed based on the patients needs Reassure pregnant women suffering from the common cold about the safety of short-term use of OTC cold medications. These drugs, however, should not be used indiscriminately or for extended periods of time. Use should be confined to only those products that are appropriate for the symptoms.[77] Briggs recommends against psuedoephedrine in pregnancy[78] Recommend women use acetaminophen for analgesia. Use of ibuprophen is not recommended[79] Advise caution on the use of all herbal products as herbal products are not regulated and have limited information available. Motherrisk has reviewed available literature and formed a database of frequently discussed herbs. Motherisk recommends caution regarding the use of most herbal preparatioins due to lack of evidence of their safe use in pregnancy	http://www.cfp.ca/cgi/content/full/54/5/687 http://www.motherisk.org/prof/updatesDetail.jsp?content_id=881 http://briggsdrugsinpregnancy.com http://www.motherisk.org/women/herbal.jsp
Medications, prescription	Advise women to continue all prescribed medications until they consult with the prescribing physician Women taking methadone should be advised to continue at current dose and advice should be sought from a practioner knowledgeable about perinatal substance use	www.motherisk.org or Toll free:1-877-327-4636
Mental and emotional well-being	See the guidelines available through these two BC websites	http://www.bcwomens.ca/Services/HealthServices/ReproductiveMentalHealth/default.htm http://www.bcphp.ca/List%20of%20Guidelines.htm

Topic	Overview/Comments	References
Nutritional supplements	Recommend supplementation with folic acid before conception and throughout pregnancy; Folic acid supplementation as per patient risk [80] (0.4 mg – 5 mg per day pre pregnancy)	www.motherisk.org or Toll free: 1-877-327-4636
	Recommend the use of multivitamin supplements including folic acid for at least two to three months preconception for primary prevention and throughout pregnancy and the postpartum period and as long as breastfeeding continues[81,82]	Goh, Y., Bollano, I.E., Einarson, T.R., & Koren, G. (2006). Prenatal multivitamin supplementation and rates of congenital anomalies: a Meta-analysis. Journal of Obstetrics and Gynaecology Canada, 28(8), 680-689 http://www.sogc.org/guidelines/documents/guiJOGC201JCPG0712.pdf
	Recommend vitamin D supplement between 400-2000 IU/day. Important for their own and baby's health to maintain adequate vitamin D stores during pregnancy and breastfeeding. Health Canada advises 400 IU vitamin D intake during pregnancy and breastfeeding. Evidence is accumulating that a higher intake is necessary. The CPS recommends women consult with care provider regarding appropriateness of a supplement of 2000 IU/day[83]	http://www.hc-sc.gc.ca/ahc-asc/media/advisories-avis/_2007/2007_72-eng.php http://www.cps.ca/english/statements/II/FNIM07-01.htm
	Iron supplements in the first trimester can cause increased nausea and vomiting. Evidence regarding the benefit of routine iron supplements is inconclusive. Supplements are effective in improving the hematologic indices of the mother. However, maternal iron supplements do not appear to have a consistent effect on the hematologic status of the fetus or newborn[84]	http://www.ctfphc.org/
	Recommend women limit vitamin A intake to less than 5,000 IU per day due to the risk of birth defects associated with vitamin A	
Sex	Safe sexual intercourse during pregnancy is not associated with adverse outcomes with the exception of women with placenta previa or other causes of bleeding Recommend safe sex practices for women at increased risk of STI: illicit drug use, sexual contact with an infected individual, unprotected sex with a partner from an area of high endemicity or travellers who have unprotected sex with individuals in endemic countries, sex trade workers, sexually active youth with multiple partners and street-involved youth, previous gonorrhoea or other STI	Health Canada definition of Healthy Sexuality http://www.hc-sc.gc.ca/hl-vs/sex/index-eng.php Health Canada recommended book http://www.hc-sc.gc.ca/hl-vs/sex/index-eng.php

Topic	Overview/Comments	References
Substance use: alcohol	Recommend that there is no safe time, no safe amount Counsel women regarding alcohol use in pregnancy. Assess for alcohol risk and refer to local supports/ resources as needed. Administer the Tweak assessment and record on the Antepartum Record Counselling women has been shown to be effective in decreasing alcohol consumption during pregnancy De-alcoholized beer and coolers, low alcoholic wines contain alcohol, labels may be misleading. When taken in large amounts may be unsafe[85]	http://www.motherisk.org or Toll free 1-877-327-4636 http://www.bcphp.ca/List%20of%20Guidelines.htm http://www.hcip-bc.org/index.htm
Substance use: illicit drugs	Advise all women of potential adverse affects of substance use including marijuana Provide counselling and referral as appropriate Consider methadone maintenance for opioid use Women who use illicit drugs require specialized interventions within a harm reduction model	http://www.bcphp.ca/List%20of%20Guidelines.htm
Substance use: tobacco	Recommend screening all women for tobacco use and exposure to second-hand smoke. Offer referral to specialized counselling and quit smoking resources Consider and discuss the benefits of nicotine replacement therapy with women who smoke more than 10 cigarettes a day and who have not quit smoking by 12 weeks of pregnancy[86]	Quitnow www.quitnow.ca or 1-877-455-2233 http://www.bcphp.ca//sites/bcrcp/files/Guidelines/SubstanceUse/TobaccoGuidelines.pdf
Tattoos in lower back and epidurals	There is no information that tattoos pose an actual risk from the use of neuraxial block (spinals and epidurals)[87, 88, 89, 90,91] Many dermatologists do not consider tattoo ink capable of causing a reaction once it is fixed in the tissue, which usually takes about 6 months There are often areas free of pigment where the needle can be inserted The simple device of making a small “nick” in the skin with a needle prior to inserting the epidural needle may decrease the risk of “coring”	
Vision Care	Transient changes in prescriptions are common during pregnancy, return to previous state postpartum	
Workplace	Most workplaces are safe; prolonged standing, exposure to certain chemicals and high risk occupations (lifting heavy objects, shift work, high stress environment) may require workplace adaptations	http://www.ottawa.ca/residents/health/families/planning/pregnancy/healthy/workplace_health_en.html http://www.hrsdc.gc.ca/eng/lp/spila/wlb/wfp/13Health_and_Safety_Provisions.shtml

Additional Web Resources

Websites for caregivers

BC Perinatal Health Program (guidelines)	**www.bcphp.ca**
Society of Obstetricians and Gynecologists of Canada (SOGC)	**www.sogc.org**
Motherisk	**www.mortherisk.org**
Healthy Eating, Healthy Weight Gain, Healthy Exercise	**www.healthypregnancyBC.ca**
Healthy Choices in Pregnancy	**www.hcip-bc.org/index.htm**
UK NICE Clinical Guidelines	**http://www.nice.org.uk/guidance/CG62**
Institute for Clinical Systems Improvement	**http://www.icsi.org/prenatal_care_4/prenatal_care__routine__full_version__2.html**

Recommended Websites for Women

Topic	Website
Baby's Best Chance online (print copies available at local health unit)	**www.health.gov.bc.ca/library/publications/year/2005/babybestchancepdf**
Baby's Best Chance DVD online	**http://www.hls.gov.bc.ca/maternal/initiatives/bbc.html**
Breastfeeding – Best Start	**www.beststart.org/resources/**
Breastfeeding – La Leche League	**www.groups.illc.ca/groups.php?prov=BC**
Doula Support (finding a doula)	**www.bcdoulas.org**
BC Association of Family Resource programs	**www.frpbc.ca**
BC Health Files	**www.healthlinkbc.ca/kbaltindex.asp**
Eating Well with Canada's Food Guide and My Food Guide	**www.healthcanada.gc.ca/foodguide**
Health Canada's Body Mass Index (BMI) calculator	**www.hc-sc.gc.ca/fn-an/nutrition/weights-poids/guide-ld-adult/bmi_chart_java-graph_imc_java-eng.php**
Healthy Eating, Healthy Weight, Healthy Exercise	**www.healthypregnancyBC.ca**
Healthy Pregnancy	**www.motherisk.org** **www.hcip-bc.org/index.htm** **www.healthypregnancyBC.ca**
Infant Crying	**www.purplecrying.org**
Intimate Partner Violence/Safe Houses	**www.cd.gov.bc.ca/women/contacts/th.htm**
Medication, Substance Use in Pregnancy	**www.motherisk.org**
Canada's Physical Activity Guide to Healthy Active Living	**www.phac-aspc.gc.ca/pau-uap/paguide/** **www.healthypregnancyBC.ca**
Substance Use, Quit Smoking	**www.quitnow.ca**

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References (Endnotes)

1 http://www.health.gov.bc.ca/library/publications/year/2005/babybestchance.pdf

2 BCPHP is situated within the Provincial Health Services Authority with a direct reporting relationship to its Executive Sponsor, Dr. J Christilaw who is the PHSA executive sponsor responsible provincially for women's health and the Women's Hospital and Health Sciences Center.

3 http://www.nice.org.uk/guidance/CG62

4 http://www.ctfphc.org/

5 http://www.ctfphc.org/

6 http://www.health.gov.bc.ca/library/publications/year/2004/mcep_recommend_dec2004.pdf Maternity Care Enhancement Project (2004), p 30.

7 http://guidance.nice.org.uk/CG62

8 http://www.sogc.org/media/pdf/advisories/JOGC-dec-07-FOLIC.pdf

9 http://www.sogc.org/media/pdf/advisories/JOGC-dec-07-FOLIC.pdf

10 www.healthypregnancyBC.ca

11 http://www.healthypregnancybc.ca/sites/healthyweight/files/maternal_weight_FINAL_mar5_09.pdf

12 BMI calculator: http://www.hc-sc.gc.ca/fn-an/nutrition/weights-poids/guide-ld-adult/bmi_chart_java-graph_imc_java-eng.php

13 www.healthypregnancyBC.ca

14 http://www.sogc.org/guidelines/documents/gui218CPG0810.pdf

15 http://www.bcphp.ca/

16 http://www.bcphp.ca//sites/bcrcp/files/Guidelines/Obstetrics/Guideline_17.pdf

17 http://www.sbhac.ca/pdf/SOGC%20folic%20acid-guidelines-12-2007.pdf

18 http://www.sogc.org/index_e.asp

19 http://www.sogc.org/guidelines/documents/gui214CPG0809.pdf

20 http://www.cmaj.ca/cgi/reprint/172/5_suppl/S1.pdf

21 http://www.cmaj.ca/cgi/reprint/172/5_suppl/S1.pdf

22 http://www.bcphp.ca//sites/bcrcp/files/Guidelines/SubstanceUse/TobaccoGuidelines.pdf

23 http://www.nice.org.uk/guidance/CG62

24 www.bcprenatalscreening.ca

25 http://www.bcphp.ca//sites/bcrcp/files/Guidelines/Obstetrics/Guideline_17.pdf

26 http://www.phabc.org/pdfcore/Dental_Health_Evidence_Review.pdf?NSNST_Flood=13617af762044370ae97658977550a2e

27 http://www.sogc.org/guidelines/public/133E-CPG-September2003.pdf

28 http://www.sogc.org/guidelines/documents/gui218CPG0810.pdf

29 http://www.phac-aspc.gc.ca/std-mts/sti-its/guide-lignesdir-eng.ph

30 http://www.phac-aspc.gc.ca/std-mts/sti-its/pdf/502chlamydia-eng.pdf

31 http://www.phac-aspc.gc.ca/std-mts/sti-its/pdf/secii-eng.pdf

32 http://www3.interscience.wiley.com/journal/119271879/abstract

References *con't*

[33] *American Family Physician*. (April 1 2005, Vol 1 pg 1307-16); http://www.sogc.org/guidelines/public/90E-CPG-June2000.pdf

[34] http://www.phac-aspc.gc.ca/std-mts/sti-its/guide-lignesdir-eng.ph

[35] http://www.sogc.org/guidelines/documents/gui206CPG0803hhypertensioncorrection.pdf

[36] http://www.sogc.org/guidelines/documents/gui206CPG0803hhypertensioncorrection.pdf

[37] www.healthypregnancyBC.ca

[38] http://www.hc-sc.gc.ca/fn-an/nutrition/prenatal/national_guidelines_cp-lignes_directrices_nationales_pc-eng.php

[39] http://www.iom.edu/~/media/Files/Report%20Files/2009/Weight-Gain-During-Pregnancy-Reexamining-the-Guidelines/Report%20Brief%20-%20Weight%20Gain%20During%20Pregnancy.ashx

[40] http://www.sogc.org/index_e.asp

[41] http://www.sogc.org/guidelines/index_e.asp#Obstetrics

[42] Bujold, (2002). Interdelivery interval and uterine rupture. *AJOG* 187(5):1199-1202.

[43] Bujold, (2004). Modified Bishop's score and induction of labor in patients with a previous cesarean delivery. *AJOG* 191(5):1644-1648.

[44] Hamilton, (2001). Dystocia among women with symptomatic uterine rupture. *AJOG* 184(4):620-624.

[45] Harper and Marcones, (2008). Predicting success and reducing the risks when attempting vaginal birth after cesarean. Obs & Gyn Survey, 63(8):538-545.

[46] RCOG Guideline No. 45, Feb. 2007. Birth after previous caesarean birth.

[47] Shipp Td, Zelop CM, Repke JT, Cohen A, Lieberman E. (2001). Interdelivery interval and risk of symptomatic uterine rupture. *Obstet Gynecol* 97:175-77.

[48] http://www.sogc.org/guidelines/public/121E-CPG-November2002.pdf

[49] http://www.sogc.org/pguidelinesublic/162E-CPG-June2005.pdf

[50] http://www.cdc.gov/groupbstrep/hospitals/hospitals_guidelines.htm

[51] http://www.sogc.org/guidelines/documents/gui208CPG0806.pdf

[52] http://www.sogc.org/guidelines/documents/gui197CPG0709r.pdf

[53] http://www.cpsbc.ca/files/u1/2006-december.pdf

[54] http://www.sogc.org/guidelines/documents/gui221PS0812.pdf

[55] Continuous support for women during childbirth [PDF]. *The Cochrane Database of Systematic Reviews* 2003, Issue 3. Art. No.: CD003766. DOI: 10.1002/14651858.CD003766

[56] http://www.sogc.org/guidelines/public/133E-CPG-September2003.pdf

[57] http://www.sogc.org/guidelines/public/121E-CPG-November2002.pdf

[58] http://www.diabetes.ca/files/cpg2008/cpg-2008.pdf

[59] http://www.health.gov.bc.ca/library/publications/year/2006/MHA_PerinatalDepression.pdf

[60] http://www.sogc.org/guidelines/public/149E-CPG-September2004.pdf

[61] http://www.sogc.org/guidelines/documents/gui226CPG0906.pdf

[62] Mizuno K, Mizuno N, Shinohara T, Noda M. (2004). Monther-infant skin-to-skin contact after delivery results in early recognition of own mother's milk odour. *Acta Paediatrica* 93(12):1640-1645

[63] Bergstrom A, Okong P, Ransjo-Arvidson A-B. (2006). Immediate maternal thermal response to skin-to-skin care of newborn. *Acta Paediatrica* 96(5):655-658

[64] http://www.health.gov.bc.ca/library/publications/year/2005/babybestchance.pdf

[65] http://www.phac-aspc.gc.ca/dca-dea/prenatal/sids-eng.php

[66] http://www.health.gov.bc.ca/library/publications/year/2005/babybestchance.pdf

[67] http://www.sogc.org/guidelines/documents/gui214CPG0809.pdf

[68] http://guidance.nice.org.uk/CG62/Guidance/pdf/English

[69] http://www.sogc.org/guidelines/documents/gui211CPG0808.pdf

[70] http://www.sogc.org/guidelines/public/119E-CPG-September2002.pdf

[71] Adapted from *American Family Physician*. April 1;2005 pg 1307-16

[72] http://wwwn.cdc.gov/travel/yellowBookCh9-PregnancyTraveling.aspx

[73] http://www.icbc.com/road-safety/safer-drivers/seatbelts

[74] http://www.vch.ca/public/docs/CorePrograms/dentalER.pdf

[75] http://www.vch.ca/public/docs/CorePrograms/dentalER.pdf

[76] http://www.cfp.ca/cgi/content/full/54/10/1386

[77] http://www.motherisk.org/prof/updatesDetail.jsp?content_id=881

[78] Briggs, G., et el., *Drugs in Pregnancy and Lactation*. A Reference Guide to Fetal & Neonatal Risk. 8th Edition. Lippincott Williams & Wilkins. 2008.

[79] Koren G, Florescu A, Costei AM, Boskovic R, Moretti ME. Nonsteroidal anti-inflammatory drugs during third trimester and the risk of premature closure of the ductus arteriosus: a meta-analysis. *Ann Pharmacother* 2006;40(5):824-9.

[80] http://www.sogc.org/media/pdf/advisories/JOGC-dec-07-FOLIC.pdf

[81] http://www.motherisk.org/women/folicAcid.jsp

[82] http://www.sogc.org/guidelines/documents/guiJOGC201JCPG0712.pdf

[83] http://www.cps.ca/english/statements/II/FNIM07-01.htm

[84] http://www.ctfphc.org/

[85] http://www.motherisk.org

[86] http://www.bcphp.ca//sites/bcrcp/files/Guidelines/SubstanceUse/TobaccoGuidelines.pdf

[87] Campbell DC et al. Incidence of tissue coring with the 25-gauge Quincke and Whitacre spinal needles. *Reg Anesth* 1996;21:582-5.

[88] Brandus V. The spinal needle as a carrier of foreign material. *Can Anaes Soc J* 1968;15:197-201.

[89] Charlebois PA. Coring: the unseen menace. *Can Anaes Soc J* 1066;13:585-97.

[90] Goldschneider KR, Brandom BW. The incidence of tissue coring during the performance of caudal injection in children. *Reg Anesth Pain Med* 199;24:553-6.

[91] Douglas, MJ, Swenerton, JE. Epidural anesthesia in three parturients with lumbar tattoos. *Can J Anesth* 2002;49:1057-60.

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