Provincial Council for Maternal and Child Health
building a brighter future

Clinical Guidelines for Late Preterm Birth

Reducing the Risk of Late Preterm Birth (PTB)

Pre-pregnancy and Prenatal Care*

Pre-pregnancy and prenatal care strategies are aimed at reduction of risk factors

Rationale	Recommendation(s)	Evidence
Women 35 years and older have an increased risk of preterm birth. The suspected mechanisms include • Higher rates of medically indicated induction for fetal or maternal reasons (e.g. diabetes, hypertension) • Higher rates of multiples (both spontaneous and assisted) • Higher rates of in vitro fertilization and ovulation induction which are associated with increases in PTB even in singletons	**Late Maternal Age: 35 Years and Greater:** The Best Start website provides comprehensive information for women and care providers on the risks of childbirth with late maternal age.	
Smoking increases the risk of PTB by 27%. Smoking is most heavily implicated in the early or very early preterm birth. Smoking is strongly associated with a number of other maternal and fetal problems in pregnancy and the smaller effect seen with the late preterm population does not diminish smoking as a significant risk to women, fetuses, infants and children. Literature identifies that smoking is strongly associated with lower incomes and younger mothers.	**Smoking:** 1. Greater focus on primary preconception prevention or cessation among women of child bearing age. 2. Screening and referral to smoking cessation programs as part of antenatal care.	Peacock J. L., Bland J. M., Anderson H. R. Preterm delivery: effects of socioeconomic factors, psychological stress, smoking, alcohol, and caffeine. BMJ 1995; 311-535 (26 August) Osadchy A., Kazmin, A., Koren, G., Nicotine Replacement Therapy During Pregnancy: Recommended or not

Rationale	Recommendation(s)	Evidence
	Motherisk recommends cognitive behavioral therapy as a first method of intervention and supports nicotine replacement therapy if required for women who smoke more than 5 cigarettes per day.	Recommended? August JOGC 2009, pp 744-747.
Twin pregnancies have an *absolute* risk of PTB of 50 % which constitutes an approximately 8-fold (800%) increased risk over singletons. Twins conceived through in vitro fertilization have an increased risk of 23% over spontaneously conceived twins. Singletons conceived through in vitro fertilization have an 84 % increased risk of preterm birth compared to spontaneously conceived singletons. Multiples occur spontaneously at a higher rate in women over 35 years of age.	**Multiples and Assisted Reproductive Therapies (ART):** Education to women of childbearing age and pregnant women regarding the risks of multiple births associated with advanced maternal age and ART.	McDonald S, Han Z, Mulla S, Ohlsson A, Beyene J, Murphy K. Preterm birth and low birth weight among in vitro fertilization twins: a systematic review and meta-analyses. *Eur J Obstet Gynecol Reprod Biol* 2010;148:105-113. McDonald SD, Han Z, Mulla S, Ohlsson A, Beyene J, Murphy KE. Preterm Birth and Low Birth Weight among *in vitro* Fertilization Singletons: A Systematic Review and Meta-analyses. *Eur J Obstet Gynecol Rep Biol* 2009;146:138-148.
Cocaine use puts women at a threefold (300%) increased risk for preterm birth. There is a higher risk of placental abruption where the placenta separates from the uterine wall, with the use of cocaine. (2% among cocaine users vs. close to 0% in nonusers). Unless immediate operative delivery and neonatal expertise are available, large placental abruptions can result in	**Cocaine:** 1. Educate women of child-bearing age regarding the risk of preterm birth with cocaine use 2. Early identification of women who use cocaine and referral to cessation programs. Pregnant women should have priority access to addiction services to	Gouin K., Murphy K., Shah P.S. In Press Am J Hum Biol. 1999 Sep; 11 (5): 598-602

Rationale	Recommendation(s)	Evidence
the death of the fetus and be life-threatening to the mother.	optimize outcomes for the infant. 3. Initiate harm reduction interventions with social supports for women using crack cocaine.	
Obese women have a 30% increase in preterm birth with a 26% increase of preterm birth less than 32 weeks gestation. Underweight women have a 30 % increase in preterm birth and a 20% increase in induced preterm birth.	**Body Mass Index:** 1. Educate women of childbearing age of the risk obesity and being underweight pose to preterm birth. 2. Preconceptual screening and referral to nutritional counselling for obese and underweight women to help them achieve optimal body weight. 3. Social assistance to facilitate access to appropriate nutritious food items may be required.	McDonald SD, Han Z, Mulla S, Beyene J. Overweight and obesity in mothers and risk of preterm birth and low birth weight infants: a systematic review and meta-analyses. *BMJ* 2010; Jul 20; 341:c3428.doi:10.1136/bmj.c3428. Han Z, Mulla S, Beyene J, Liao G, McDonald SD. Maternal Underweight and the risk of preterm birth and low birth weight: A systematic review and meta-analyses. *Int J of Epidemiology (in press)* 2010.
Exposure to violence increases PTB by 48%. There is increased risk for intimate partner violence among teenagers, Aboriginal women, women of limited activity, single mothers and women with low incomes. The incidence of intimate partner violence is increased fourfold among women with unwanted pregnancies.	**Intimate Partner Violence/Domestic Violence:** 1. Promote disclosure of intimate partner violence as part of antenatal care as per the SOCG guidelines. 2. Refer to the appropriate services for support	Shah P.S., Shah J. In Press Journal of Women's Health Intimate Partner Violence Consensus Statement, SOGC CLINICAL PRACTICE GUIDELINE, No 157, April 2005 http://www.sogc.org/guidelines/public/157E-CPG-April2005.pdf

Rationale	Recommendation(s)	Evidence
Pregnancy is a time of change in patterns of violence: violence may begin, worsen or, in some cases, stop. For pregnant women, clinical interventions that include counseling to increase safety behaviors result in the adoption of these practices and reductions in abusive incidents.		
The rate of preterm birth increases by 27% after one induced abortion and by 62% after more than one induced abortion.	**Induced Abortion:** Educate women of childbearing age regarding the increased risk of preterm birth after an induced abortion.	Shah P. S., Zao J. Knowledge Synthesis Group of Determinants of Preterm/LBW Births. Induced termination of pregnancy and low birth weight and preterm birth: a systemic review and meta-analyses. BJOG 2009 Oct; 116 (11): 1425-42
A systematic review revealed that an inter-pregnancy interval, that is the time between the birth of one infant and the birth of the next, of 18-36 months had the lowest rates of preterm birth. The rate of preterm birth increased when the inter-pregnancy interval was less than 18 months and greater than 60 months. An interval of six months or less increased the rate of preterm birth by 40%, an interval of 7 to 11 months increased the rate by 4 % and an interval of 12 to 17 months increased the rate by 7%. An inter-pregnancy interval of greater than or equal to 60 months increased the preterm birth rate by 20%.	**Inter-pregnancy Interval:** 1. Educate women of childbearing age about the benefits of optimal inter pregnancy interval for reduction of adverse pregnancy outcomes including preterm births. 2. Educate new mothers and their partners regarding optimal pregnancy intervals during hospitalization or at the first follow-up visit	Conde-Agudelo A, Rosas-Bermúdez A, Kafury-Goeta AC., Birth spacing and risk of adverse perinatal outcomes: a meta-analysis., JAMA. 2006 Apr 19;295 (15):1809-23.
Unintended pregnancies are associated with a (36%) increased risk of Preterm birth (PTB)	**Unintended Pregnancy:** Assess whether the pregnancy was intended or unintended and document	Shah P. S., et al. Maternal Child Health Journal e-publication ahead of print

Rationale	Recommendation(s)	Evidence
	on the antenatal history.	
In studies examining marital status and pre-term births (married versus unmarried mothers), overall unmarried mothers had 22% higher risk of preterm birth. A subset of this data revealed single mothers had a 54% higher risk and cohabitant women had 15% higher risk of preterm birth.	**Unmarried Status:** Educate women of childbearing age about the risks of unmarried status on late preterm birth	Shah P. S., et al. Maternal Child Health Journal e-publication ahead of print
Evidence indicates that the risk of preterm birth is increased in adolescents. This problem is regarded differently depending on the social structures of the community in which the teenager lives, and may require varied approaches. The incidence of preeclampsia is higher in pregnant teens than women in their 20s.	**Young Maternal Age:** Identify women of childbearing age at risk and refer to appropriate community-based programs which focus on : • improved access to contraception • early childhood interventions • youth development programs	Ohlsson A and Shah P. IHE Report Determinants and Prevention of Low Birth Weight: A synopsis of the Evidence December 2008, page 13
Pre-eclampsia increases the risk of preterm birth. When women have pre-eclampsia, preterm birth may be medically indicated for maternal or fetal health. In women at high risk for hypertension and pre-eclampsia with low calcium intake, adequate calcium intake (including supplementation) reduces preterm birth by 55%. SOGC guidelines recommend all women be screened for calcium intake and supplementation if less than 600 mg of calcium daily dietary intake is identified.	**Pre-eclampsia:** 1. Educate women of childbearing age regarding the importance of dietary calcium with supplementation when intake is less than 600 mg/day. 2. Direct women to monitor their calcium intake regularly. http://www.osteoporosis.ca/index.php/ci_id/5355/la_id/1.htm 3. All pregnant women should be	http://www.osteoporosis.ca/index.php/ci_id/5355/la_id/1.htm Diagnosis, Evaluation and Management of the Hypertensive Disorders of Pregnancy. SOGC Clinical Practice Guideline. No. 206 March 2008 http://www.sogc.org/guidelines/documents/gui206CPG0803_001.pdf

Rationale	Recommendation(s)	Evidence
Calcium citrate may be preferable because calcium carbonate preparations, made from oyster shells, can contain mercury.	directed to: *Eat Right Ontario*, a website that provides free dietary counseling with translation for many languages.	
Women with a past history of preterm birth are at approximately 2 times higher risk of repeat preterm birth. Progesterone is a hormone that relaxes the uterus. Higher concentrations of progesterone are present during pregnancy and fall dramatically before term.	**History of Preterm Labour or a Shortened Cervix:** SOGC has published a technical paper that reviews the available evidence and recommends that women be informed of the potential for progesterone to reduce preterm birth. The technical paper suggests that Canadian women interested in using progesterone do so within a study evaluating the use.	http://www.sogc.org/guidelines/documents/guiJOGC202TU0801.pdf
There is marginal high risk of preterm birth in women exposed to higher levels of pollution (small particulate matter). There are no studies to suggest that reducing air pollution reduces preterm birth; however, common sense would indicate that there are beneficial effects of reducing environmental pollution	**Air Pollution:** Advise pregnant women to avoid exposure to excessive pollution	Shah PS, Balkhair T on behalf of Knowledge Synthesis Group on Pretetrm/LBW births. Air pollution and pregnancy outcome. In Press. Environmental International.
Supplementation of iron and folic acid is a standard of care for all pregnant women. A review of multivitamins revealed that supplementation with multivitamins instead of iron-folic acid reduced incidence of low birth weight infants but not preterm birth.	**Nutritional Factors:** Based on available evidence and the beneficial effects of multivitamins for **low birth weight**, multivitamins should be offered to all pregnant women.	

Rationale	Recommendation(s)	Evidence
The SOGC guidelines on bacterial vaginosis indicate that there is currently no consensus as to whether to screen for or treat bacterial vaginosis in the general pregnant population in order to prevent adverse outcomes such as preterm birth. However, in symptomatic pregnant women, testing for and treatment of bacterial vaginosis is recommended for symptom resolution.	**Infections:** Follow current SOCG guidelines	http://www.sogc.org/guidelines/documents/gui211CPG0808.pdf