

## Maternal depression and child development



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Maternal depression is considered a risk factor for the socioemotional and cognitive development of children (1). The current prevalence of depression in Canada averages at 6%, which is similar to the rates in other western countries (2) (the female-to-male ratio average is 2:1 [3]). However, the prevalence of postpartum depression is approximately 13% (4). Women of childbearing age are particularly at risk for depression, and many of them experience high levels of social morbidity and depressive symptoms that are often unrecognized and untreated. Mothers already at risk for depression are particularly fragile during the first months postpartum. Maternal depression has consequences on the child's development. Because physicians who care for infants and children encounter mothers repeatedly, it is important that they have the knowledge and skills for the detection of symptoms of maternal depression.

The objectives of this statement are:

- To review the present knowledge on the consequences of maternal depression on the development of children at various ages;
- To review the evidence-based literature on the treatment of maternal depression and its impact on newborns, infants and children; and
- To review the role of the child's physician in the detection of symptoms of maternal depression, and the coordination of appropriate support and management.

A literature search for the past 15 years was conducted using the MEDLINE database, and by reviewing the bibliographies of the retrieved articles. Of particular interest were the prospective longitudinal cohort studies in which mothers were recruited during their pregnancy or postpartum period, and the children were assessed at regular intervals.

### INTRODUCTION

Postpartum psychiatric disorders are generally divided into three categories: postpartum blues, postpartum psychosis and postpartum depression. Postpartum blues is a relatively common emotional disturbance with crying, confusion, mood lability, anxiety and depressed mood. The symptoms appear during the first week postpartum, last for a few hours to a few

days and have few negative sequelae. At the other end of the spectrum, postpartum psychosis refers to a severe disorder beginning within four weeks postpartum, with delusions, hallucinations and gross impairment in functioning. Postpartum depression begins in or extends into the postpartum period and core features include dysphoric mood, fatigue, anorexia, sleep disturbances, anxiety, excessive guilt and suicidal thoughts (5). The diagnosis requires that symptoms be present for at least one month and result in some impairment in the woman's functioning (6). Women who have experienced postpartum depression have a 50% to 62% risk for future depressions (7). Other risk factors for postpartum depression include a history of mood disorders, depression symptoms during the pregnancy and a family history of psychiatric disorders (4). Stress factors, such as negative life events, poor marital relationships, having a special needs infant or medically 'fragile' infant, lack of social support, drug abuse, and personal and family psychopathology, have been associated with postpartum depression in some studies, but other studies have found no association (6). Postpartum depression tends to be milder than episodes of depression that occur at other times, with lower levels of anxiety, agitation, insomnia and somatic symptoms (8). However, the duration seems to be the same in postpartum and nonpostpartum depression, and lasts several months (6).

The consequences on the child of maternal postpartum depression are not restricted to infancy, but can extend into toddlerhood, preschool age and even school age. Maternal depression that occurs later influences the development of the school-age child and the adolescent. Table 1 summarizes the consequences of maternal depression from prenatal issues to adolescence.

The associations between maternal depression, maternal behaviour and child outcomes are complex, and not all studies have found a relationship between maternal depression and indicators of poor parenting. Variations in the type, severity, chronicity and timing of maternal depression (9), heterogeneity in sampling (community versus high-risk multiproblem samples), and potentiating risk factors, such as family adversity, low social support and financial stress (10), all contribute to differences in outcomes in children. On the other hand, stress factors can be responsible for adverse child outcomes in the absence of maternal depression.

**TABLE 1**  
**Consequences of maternal depression**

<b>Prenatal</b>	Inadequate prenatal care, poor nutrition, higher preterm birth, low birth weight, pre-eclampsia and spontaneous abortion
<b>Infant</b>	
Behavioural	Anger and protective style of coping, passivity, withdrawal, self-regulatory behaviour, and dysregulated attention and arousal
Cognitive	Lower cognitive performance
<b>Toddler</b>	
Behavioural	Passive noncompliance, less mature expression of autonomy, internalizing and externalizing problems, and lower interaction
Cognitive	Less creative play and lower cognitive performance
<b>School age</b>	
Behavioural	Impaired adaptive functioning, internalizing and externalizing problems, affective disorders, anxiety disorders and conduct disorders
Academic	Attention deficit/hyperactivity disorder and lower IQ scores
<b>Adolescent</b>	
Behavioural	Affective disorders (depression), anxiety disorders, phobias, panic disorders, conduct disorders, substance abuse and alcohol dependence
Academic	Attention deficit/hyperactivity disorder and learning disorders

## MATERNAL DEPRESSION AND INFANT DEVELOPMENT

### Mother-infant interactions

On a daily basis, infants repeatedly participate in interactive routines with their mothers. Maternal depression compromises the dyad's capacity to mutually regulate the interaction, through two interactive patterns, intrusiveness or withdrawal. Intrusive mothers display a hostile affect, and disrupt the infant's activity. The infants experience anger, turn away from the mother to limit her intrusiveness and internalize an angry and protective style of coping. Withdrawn mothers are disengaged, unresponsive, affectively flat and do little to support the infant's activity. The infants are unable to cope or self-regulate this negative state, and develop passivity, withdrawal and self-regulatory behaviours (eg, looking away or sucking on thumb) (11,12).

### Cognitive development

Infants of postnatally depressed mothers have been reported to show patterns of dysregulated attention and arousal. In a study by Murray (13), cognitive performance regarding the independent existence of objects was worse for infants of 61 postnatally depressed mothers than the infants of 42 nondepressed mothers, even after adjustment for

contextual adversity. Depressed mothers are less likely to offer contingent stimulation to their infants (14), and this disrupts their performance on nonsocial learning tasks (15). Another factor that may interfere with learning is the negative affect shown by infants of depressed mothers, even when they are interacting with nondepressed adults (16). It has been documented that an infant's own negative affect interferes with learning and the ability to process information (17).

## MATERNAL DEPRESSION AND DEVELOPMENTAL OUTCOME OF TODDLERS AND PRESCHOOLERS

### Behavioural development

Depressed mothers generally show less attentiveness and responsiveness to their children's needs. They are also poor models for negative mood regulation and problem solving. Longitudinal studies have compared the behaviours of depressed and nondepressed mothers, and the outcome of their children. They showed that depressed mothers were less likely to set limits on their children and to follow through if they did set limits (18). Children of depressed mothers appeared more passively noncompliant, with less mature expressions of age-appropriate autonomy (19). They were rated by their dysphoric mothers as being more vulnerable, and having more internalizing (depressed) and externalizing problems (aggressive and destructive), which are associated with lower interaction ratings (20). They were also more likely to respond negatively to friendly approaches, more likely to engage in low-level physical play and less likely to engage in individual creative play than control children (21). These aspects of child behaviour were associated with postnatal depression, even when taking adverse situations such as marital conflict, and demographic variables, such as maternal age, ethnicity, socioeconomic status, marital status, child's age and number of siblings, into account.

### Cognitive development

Studies on large samples all agree on the negative impact of maternal postpartum depression on a child's cognitive development. Early experience with insensitive maternal interactions (as in maternal postpartum depression) appears to be predictive of poorer cognitive functioning (22). Boys may be more sensitive than girls to the effects of the mother's illness. In a study by Sharp et al (23), only boys showed a decrease on standardized tests of intellectual attainment (mainly on indexes of abstract intelligence, reasoning about opposites and analogies) and the "draw-a-child" task. Other aspects of cognitive development, such as cognitive-linguistic functioning (24), have also been shown to be negatively affected, and there were also deficits on the perceptual and performance scale (25). Outcome effects were independent of birth order, maternal education, family income, marital status and social support.

## MATERNAL DEPRESSION AND DEVELOPMENTAL OUTCOME OF SCHOOL-AGE CHILDREN

### Behavioural development

Various studies have shown that school-age children of depressed mothers display impaired adaptive functioning, including internalizing and externalizing problems. Although the studies reviewed by Beardslee et al (26) were uncontrolled studies, a more recent review by Downey and Coyne (27) included studies using control groups (matched for age of parents, occupational status, ethnicity, marital status, and number and age of children), standardized diagnostic criteria to identify parental depression and valid measures of psychological functioning in children. Billings and Moos (28) showed that family stress and low support added to the prediction of child disturbance beyond that accounted for by having a depressed parent. However, the study of Lee and Gotlib (29) comparing children of depressed psychiatric mothers and nondepressed psychiatric mothers showed that the child's adjustment was more strongly related to the severity of maternal psychopathology than to diagnosis status.

Children of depressed parents are also at higher risk of psychopathology, including affective (mainly depression), anxiety and conduct disorders. Hammen et al (30) compared children from four groups of mothers (mothers with unipolar disorder, bipolar disorder and chronic medical illness, and normal mothers) with no differences in ethnicity, age, socioeconomic status or educational level. They showed that, even with the effects of chronic stress statistically controlled, there were still differences in the psychosocial outcome variables among groups, and there was particular impairment in children of unipolar mothers (30). Other studies (31-34), in which there were no demographic differences (age, marital status and socioeconomic level) between depressed and nondepressed parents, have confirmed an increased risk of psychopathology in the children of depressed parents. It seems that onset of a major depression disorder before 30 years of age in parents increases the risk of their children developing depression quite early during childhood (33,34). It is somewhat difficult to delineate which behavioural disorders are due to maternal depression and other environmental factors, and which are due to genetic susceptibility.

### Academic development

There seems to be an association between attention deficit/hyperactivity disorder (ADHD) in children and maternal mental health, as shown by a cross-sectional study by Lesesne et al (35). Using the 1998 National Health Interview Study on 9529 mother-child dyads, they found an association between an activity-limiting depression, anxiety or emotional problem in mothers, and ADHD in their children aged four to 17 years, even after adjusting for the child's age, sex, race, household income and type of family structure (35).

In a longitudinal study of 132 children by Hay et al (36), lower IQ scores, attentional problems, difficulties in mathematical reasoning and special educational needs were significantly more frequent in children whose mothers were depressed at three months postpartum than in controls. In addition, boys were more affected than girls. However, academic difficulties in children of depressed mothers were not mediated by parental IQ, sociodemographic variables or the mother's mental health after the postpartum depressive episode.

## MATERNAL DEPRESSION AND DEVELOPMENTAL OUTCOME OF ADOLESCENTS

### Behavioural development

Generally, adolescence is a vulnerable period for affective illness and major depressive disorder, which are observed twice as often in girls than in boys (37). Two cross-sectional studies showed that adolescents with a depressed parent suffered from psychosocial maladjustment (38) and experienced a significantly higher rate of affective disorder than adolescents of nonaffective psychiatric control parents (39).

Longitudinal studies have consistently reported higher rates of major depression and other psychopathology (anxiety disorders, conduct disorders and substance abuse disorders) in adolescents with an affectively ill parent than in control families with similar demographic characteristics (age, ethnicity, socioeconomic status and educational level). Hammen et al (40) followed a cohort of 92 children/adolescents between the ages of eight and 16 years over a three-year period. They found that children/adolescents with mothers suffering from unipolar depression had higher rates of affective disorders, with frequent multiple diagnoses, while the disorders in children/adolescents with mothers suffering from bipolar depression were less severe. Weissman et al (31,41,42) evaluated 91 families with 220 children between six and 23 years over a 10-year period. They observed higher rates of major depression, phobias, panic disorder and alcohol dependence in the offspring of depressed parents than in the non-ill comparison group. When major depression occurred, onset was commonly between the ages of 15 and 20 years. Beardslee et al (43) studied 81 families, randomly selected at an urban centre of a health maintenance organization, with 153 children between the ages of six and 19 years. At the initial assessment, 30% of the children/adolescents with an affectively ill parent had at least one episode of an affective illness compared with 2% in the control group. Four years later, the rates of affective disorders were 26% and 10%, respectively, and offspring of affectively ill parents had longer episodes, earlier onset and a greater number of comorbid diagnoses (44).

### Academic development

Problems encountered in school-age children, mainly ADHD and learning disabilities, persist into adolescence (35).

## RISK FACTORS, VULNERABILITY AND RESILIENCE

It has been noted in many studies that some children with depressed caregivers do not display behavioural dysfunctions and that some factors may exacerbate or moderate the effects of parental depression (45).

### Contextual factors

Among contextual risk factors, marital conflict (27), stressful life events (6), limited social support (6), poverty (46), lower social class (13) and lower maternal education (47) are factors that may exacerbate parental depression and maladaptive parenting. In a study of 156 toddlers (of whom 104 had mothers with major depressive disorder since the child's birth), Cicchetti et al (48) showed that contextual risk factors mediated the relation between maternal depression and child behaviour problems.

### Role of fathers

The role of fathers and paternal distress in child development are understudied, meanwhile, primary emphasis continues to be placed on mothers, possibly because the main caregiver for the young infant is usually the mother. However, in their study of three- to six-month-old infants, Hossain et al (49) showed that infants of depressed mothers interacted better with their nondepressed fathers who could 'buffer' the effects of the mother's depression on infant interaction behaviour. In addition, a cross-sectional study (50) of 96 families with children between the ages of five and 10 years showed that in families in which the mother was depressed, children showed lower social and emotional competence if the father also had a psychiatric disorder. The role of fathers has been studied indirectly in the context of marital discord. According to a review by Downey and Coyne (27), marital distress contributes directly to children externalizing problems, and increases their risk for clinical depression by inducing and maintaining parental depression.

### Characteristics of the child

Sex differences have been described in some studies (13,23,36), with boys being more vulnerable and distressed by maternal depression than girls.

Temperament of the child also contributes to the interpersonal processes of parental depression. It has been shown that depressed mothers make more negative appraisals of their child's behaviours, feel less confident in their parental efficacy and use maladaptive parenting techniques more often (27,51,52). A child with a more robust and easy-going temperament will be more impervious to their depressed mother's negative behaviour and will not show a reciprocal pattern of negativity (27). Other sources of resilience in children include social and cognitive skills that help them receive positive attention from adults other than their depressed parents and help reduce their depressed parent's feeling of noncompetence and rejection. It seems that an understanding of the parent's illness and recognition by the child that he or she is not to blame for the

parent's illness-related behaviour is very important to the development of resiliency in a child (53).

Although the interaction between parents and their handicapped child is beyond the scope of the present paper, it has been described that parents of mentally retarded children report higher depression scores than control parents (54), and that caregiving difficulty is a predictor of maternal depression (55).

## TREATMENT OPTIONS

### Pharmacotherapy

Because many depressive episodes occur during childbearing years, the decision to give antidepressant drugs must be balanced between the mother's well-being and fetal safety. If a woman who just recently recovered from depression treated with antidepressants becomes pregnant, she is at high risk of relapse (7). Depression during pregnancy is associated with inadequate prenatal care, poor nutrition, higher preterm birth, low birth weight, pre-eclampsia, spontaneous abortion, substance abuse and dangerous risk-taking behaviour. The substantial morbidity of untreated depression during pregnancy must be weighed against the risk of medication (56). Tricyclic antidepressants have been replaced by selective serotonin reuptake inhibitors (SSRIs) that are associated with a low risk of toxic effects.

Both tricyclic antidepressants and SSRIs cross the placental barrier. However, Kulin et al (57) did not find any increase in major fetal malformations or pregnancy-related complications in 267 women taking SSRIs compared with 267 controls. Another study (58) on 228 pregnant women taking fluoxetine showed an increase in minor perinatal complications when the medication was taken during the third trimester.

In the neonatal period, it seems that behavioural and heart rate responses to pain are reduced in newborn infants exposed to SSRIs in utero (59). Nulman et al (60) compared 46 children of mothers treated with a tricyclic antidepressant during pregnancy, 40 children of mothers treated with fluoxetine and 36 control children of nondepressed mothers who did not take any medication during pregnancy. After adjusting for the duration and severity of maternal depression, duration of treatment, number of depressive episodes after delivery, maternal IQ and socioeconomic status, the study showed that tricyclic antidepressants and fluoxetine had no adverse effects on the global IQ, language development or behaviour of children between 15 and 71 months of age (60). In a smaller sample, Casper et al (61) compared 13 children born to depressed mothers who elected not to take medication during pregnancy and 31 children born to mothers treated with SSRIs. Although the scores on the Bayley Mental Development indexes were similar in both groups of children (aged six to 40 months), children exposed to SSRIs scored lower on the Bailey Psychomotor Development indexes and the motor quality factors of the Bailey Behavioural Rating Scale (61).

One of the numerous benefits of breastfeeding is the enhancement of maternal-infant bonding. It is therefore very

important that a depressed mother who wishes to breastfeed be given adequate information. If the antidepressant medication is discontinued in the postnatal period, there is a risk of relapse, with negative consequences on the emotional and behavioural development of the infant. On the other hand, all antidepressants are excreted in breast milk. Most of the information available comes from case reports, case series, and pharmacokinetic investigations (62). According to a review by Ito (63), tricyclic antidepressants and the SSRIs, sertraline and fluoxetine, are the drugs of choice. No neurological or developmental abnormalities have yet been demonstrated in children exposed SSRIs (64,65) or tricyclic antidepressants (66) through breast milk.

To reduce infant exposure when treating postpartum depressed mothers, it is important to document all maternal use of medication, alcohol, tobacco, herbal remedies and drugs, and to encourage the discontinuation of any environmental and nonessential exposures. If maternal illness is adversely impacting interaction with the infant or other children, it is better to err on the side of treatment exposure. If it is decided to use antidepressant therapy, the selection of the antidepressant should be based on the mother's prior response and experience of adverse effects with a particular agent, risk of interactions with concurrent medications and published adverse effects associated with a particular agent on breastfeeding mothers and their infants. Maternal doses should be monitored to aim for the lowest possible dose that provides complete control of the depressive symptoms. Monotherapy is preferable, and the medication used in pregnancy should be continued in the postnatal period. The infant's exposure to SSRIs can be reduced by emptying the breasts of milk and discarding it ('pump and dump') approximately 8 h to 9 h after the mother has taken the medication (67).

Although there is no final consensus on the use of antidepressants during pregnancy and lactation, antidepressant therapy should be considered in the context of a comprehensive risk-benefit assessment, as illustrated by the decision model of Wisner et al (68). Antidepressant therapy should be considered in women who have moderate to severe symptoms and who have not responded to nonpharmacological treatments. Recent reviews (56,67-69) show that tricyclic antidepressants and SSRIs appear to be quite effective during pregnancy and the postnatal period, and may be used during pregnancy and lactation.

### **Social support and psychoeducational interventions during infancy**

Because of the consequences of maternal depression on an infant's development, many intervention studies have targeted postnatal mothers. Interventions have focused on altering the mother's mood state, increasing her sensitivity to or awareness of the infant's cues and diminishing the negative perceptions about the infant's behaviours (16). Interaction coaching techniques aim to improve the quality of mother-infant interactions, either by instructing overstimulating intrusive mothers to imitate their infants or by

showing withdrawn mothers how to attract and maintain their infants' attention (70).

Social support and home visiting interventions have been successful in improving depressed mothers' moods and attitudes (71,72), as well as their infants' attachment security and psychomotor development (46,73).

More comprehensive treatment approaches have been promising. McDonough (74) described an interactive guidance treatment directed at problems identified by the mother in the management of her infant that gives support, practical advice and education, together with strong reinforcement of good parenting practices. Field (75) studied 80 depressed mothers and their infants, offering a comprehensive social/educational/vocational rehabilitation program and free daycare in a model infant nursery over a three-month period to one-half of them. Six months later, mothers from the intervention group showed more positive interaction behaviours, and their infants had superior Bailey Mental and Motor scores, as well as more positive interaction behaviours than subjects in the control group (75).

### **Family therapy**

School-age children and adolescents from families with a depressed parent may benefit from a family-centered intervention, focusing on communication about the illness within the family and on the development of resiliency in the child. In a study by Beardslee et al (76), 37 families who had an eight- to 15-year-old child and a parent with an affective disorder were randomly assigned to a lecture group discussion or a clinician-facilitated psychoeducational intervention. Both interventions gave parents information about the causes and symptoms of childhood and adult depression, and emphasized the need for communication within the family. However, the clinician-facilitated intervention linked cognitive material to the life experiences of the family. Those in the clinician group showed more behaviour and attitude changes among parents and children, including higher levels of communication from parents to children about the illness and better understanding by the child of the parent's affective illness (76).

### **Psychotherapy**

Robert-Tissot et al (77) compared psychodynamic therapy with interaction guidance therapy. The psychodynamic treatment focuses on the mother's representation of her infant and her relationship with the infant, and explores aspects of the mother's own childhood and early attachment history. As already described, the interaction guidance therapy seeks to identify positive caregiving behaviours and to suggest alternative interpretations of an infant's behaviour. After a maximum of 10 sessions, there was a significant improvement in both groups. The infants' sleep and feeding disturbances improved, separation difficulties diminished, maternal sensitivity to infants' cues increased and intrusive control decreased. In addition, maternal self-esteem improved, and infants became more

**TABLE 2**  
**Trigger questions to elicit information about postpartum depression**

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How are you feeling about being a new mother?

Are you enjoying your baby?

Do you find that your baby is easy or difficult to care for?

How are things going in your family?

Are you getting enough rest?

How is your appetite?

During the past month, have you often been bothered by feeling down, depressed or hopeless?

During the past month, have you often been bothered by having little interest or pleasure in doing things?

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*Data from references 90, 94 and 95*

cooperative, less compulsive-compliant and showed more happiness.

Interpersonal therapy focuses on interpersonal relationships and problems experienced by depressed postpartum mothers. In a study of 120 depressed postpartum women (78), interpersonal psychotherapy reduced depressive symptoms and improved social adjustment in the subjects compared with the control group on the waiting list. Interpersonal therapy has also been used in the prevention of postpartum depression in pregnant women with at least one risk factor for postpartum depression (79).

#### **Complementary and alternative therapies**

Complementary and alternative therapies are becoming increasingly common, and St John's Wort is the second best-selling herb in Canada (80). St John's Wort seems to be effective for mild to moderate depression, although it has many drug interactions (81). There are almost no data on its reproductive safety and it cannot be recommended as safe therapy during pregnancy (82). Data on its safety during breastfeeding are scarce. From a case report (83), it was observed that hyperforin was excreted in breast milk at a low level, while hyperforin and hypericin remained below the lower limit of quantification in the infant's plasma. A prospective observational study of 33 breastfeeding women receiving St John's Wort (84) found no differences in the frequency of decreased milk production nor in infants' weight over the first year of life compared with a control group.

#### **ROLE OF THE PRIMARY CARE PHYSICIAN/PAEDIATRICIAN**

According to the 1994 guidelines of the Canadian Task Force on the Periodic Health Examination (85), fair evidence exists to exclude routine testing of asymptomatic persons for depression using the General Health Questionnaire or the Zung-Self-Rating Depression Scale (Class of recommendation: D, Level of evidence: I) from the Periodic Health Examination. However, it is strongly suggested that clinicians maintain a high degree of clinical suspicion for

depression among their patients (85). In their 2002 statement (86), the United States Preventive Services Task Force recommended screening adults for depression in clinical practices that have systems in place to assure accurate diagnosis, effective treatment and follow-up (Class of recommendation: B, Level of evidence: I). In their 2003 recommendations for paediatric practice, the American Academy of Pediatrics Task Force on the Family (87) stated that paediatricians should ascertain the physical and mental health of the parents in their practice, and periodically review the importance of parents' attention to their own mental health needs.

In a broad survey of 559 women across three clinical settings, Kahn et al (88) reported that more than 80% of mothers recognized the potential impact of depression on the child's health and well-being, and that more than 85% of mothers accepted the paediatricians role in screening and referral to adult primary care. However, a recent study (89) showed that maternal depression was under-recognized by paediatric health care providers. Moreover, Olson et al (90) reported that paediatricians lacked confidence in their ability to diagnose maternal depression and limited their involvement because of incomplete knowledge and training.

The paediatricians' role in maternal depression should be one of screening, followed by guidance for additional evaluation and treatment. There should be a systematic inquiry about family history of depression and about previous episodes of maternal depression. Screening questionnaires have been developed and validated specifically to detect postpartum depression (91-93). Examples of questions that may elicit information about postpartum depression are listed in Table 2 (90,94,95). Once depression is suspected, the paediatrician can give advice and discuss with the mother's physician or make an appropriate referral to psychiatric services. Collaboration between the mother's physician and the child's physician is very important.

For many mothers, well-baby care visits may be their sole consistent ongoing contact with health care providers. The child's physician may be the first professional to learn of the infant- and child-rearing difficulties of a distressed mother. Moreover, the child's physician can help the depressed mother understand how her mood might affect her parenting and contribute to the child's problems. Main areas of assistance include infant sleep problems, child temperament issues, developmental delay, social isolation and family stress. It is important to keep a high index of suspicion of maternal depression when child behaviour problems are discussed during a medical visit. Moreover, interventions for the depression of the mother should take priority over behavioural therapy for the child. Because postpartum depression can have long-term effects on mothers and children and its peak prevalence occurs at approximately three months, it has been suggested to screen for postpartum depression at the two-, six- and 12-month well-baby care visits (95).

In school-age children and adolescents, the presence of difficulties in child adjustment and impaired functioning at

home and in school should alert the physician to the possibility of maternal depression. Moreover, in families with a history of depression, one should keep in mind that offspring may become depressed or display other psychopathology, mostly at adolescence. These conditions often stay undiagnosed and untreated for a long time, perpetuating suffering for the whole family. The child's physician has a key role in facilitating referral to the appropriate services for the child/adolescent and the parent.

Finally, while acknowledging that children of depressed mothers are at risk for developmental and behavioural problems, as well as their predisposition for developing a depressive disorder themselves, the physician should conduct regular developmental surveillance of the child, offer anticipatory guidance, and refer them early for more comprehensive assessment and management of developmental and behavioural disorders.

### CONCLUSIONS

- Postpartum depression occurs in approximately 13% of women, and often goes unrecognized. When it is recognized, there is often a long lapse of time between referral and psychiatric evaluation and treatment because of the lack of resources.
- The infant of a depressed mother is at risk for developing insecure attachment, negative affect and dysregulated attention and arousal.
- Toddlers and preschoolers of depressed mothers are at risk for developing poor self-control, internalizing and externalizing problems, and difficulties in cognitive functioning and in social interactions with parents and peers.
- School-age and adolescent children of depressed parents are at risk for impaired adaptive functioning and psychopathology, including conduct disorders, affective disorders and anxiety disorders. They are also at risk for ADHD and learning disabilities.
- Contextual risk factors such as poverty, marital conflict and stressful life events may exacerbate parental depression and child behaviour problems. On the other hand, some children develop resiliency through an easy-going temperament, good social cognitive skills and understanding of the parent's illness.
- Experience with SSRIs during pregnancy and lactation is limited, but no major malformations or physical and developmental risks to the fetus or the breastfed infant have been described. The risks of the mother's depression seem to outweigh the low risks of antidepressant medication on the fetus or the breastfed infant.

### RECOMMENDATIONS

- Through the surveillance of the well-being and development of infants and children, the physician should stay alert to signs of mother-child interaction

difficulties, and behavioural and developmental problems in the child. Under such circumstances, they should keep in mind the possibility of maternal depression, ask a few screening questions and facilitate contact with the mother's physician or psychiatric services.

- Mothers who have taken antidepressant medication during pregnancy should be reassured that much of the evidence to date shows that there is no increased risk of teratogenicity or fetal anomalies.
- Mothers who have taken antidepressant medication during pregnancy should be reassured about the neurodevelopment of their child because long-term studies have not shown adverse effects, except for subtle differences whose clinical significance remains to be confirmed.
- Mothers who have taken antidepressant medication during lactation should be reassured that much of the evidence to date shows that there are no neurological or developmental abnormalities in children exposed to such medication through breast milk.
- Mothers should be told that data on St John's Wort are scarce and that such herbal remedies should not be taken during pregnancy and lactation.

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**Principal author:** Dr Anne-Claude Bernard-Bonnin, Hôpital Sainte-Justine, Montreal, Quebec

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The recommendations in this statement do not indicate an exclusive course of treatment or procedure to be followed. Variations, taking into account individual circumstances, may be appropriate.