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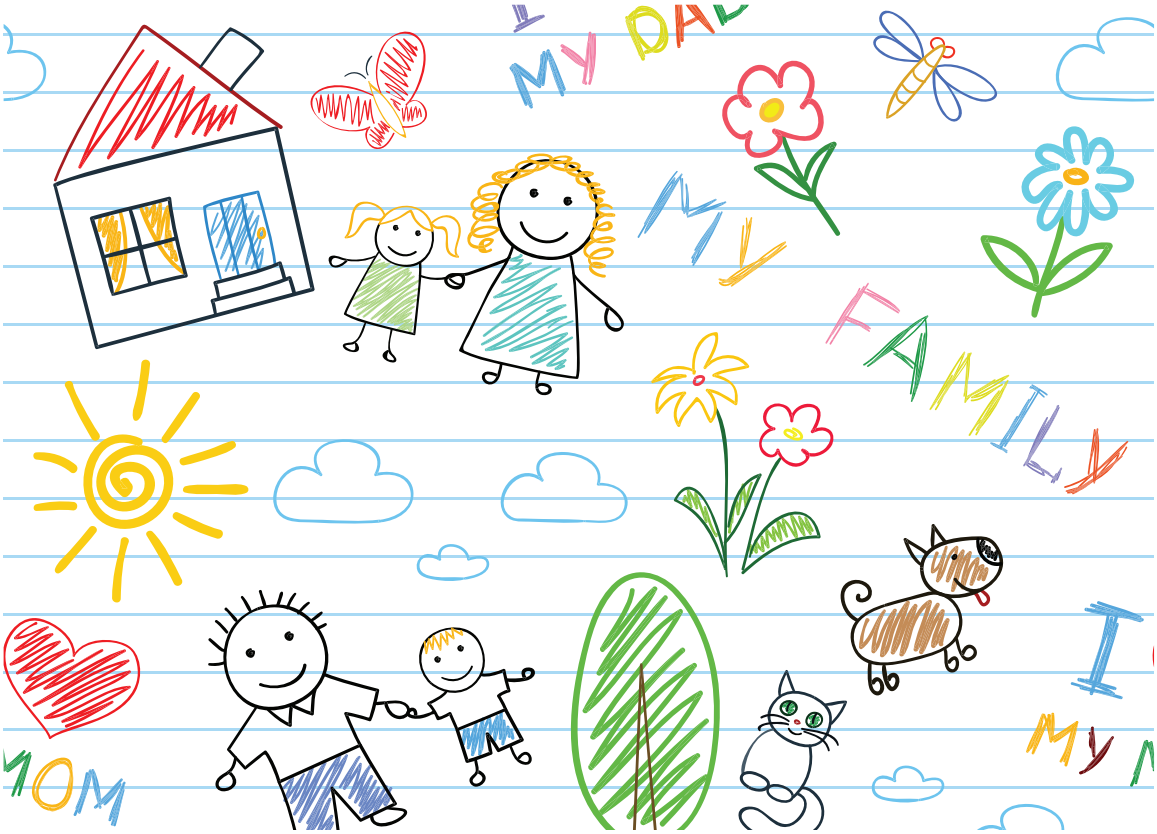
THE OFFICIAL MAGAZINE OF THE CENTRE FOR STUDIES ON HUMAN STRESS

The Centre for Studies on Human Stress is dedicated to improving the physical and mental health of individuals by empowering them with scientifically grounded information about the effects of stress on the brain and body.



Stress and Perinatality

Being a New Parent in 2014!

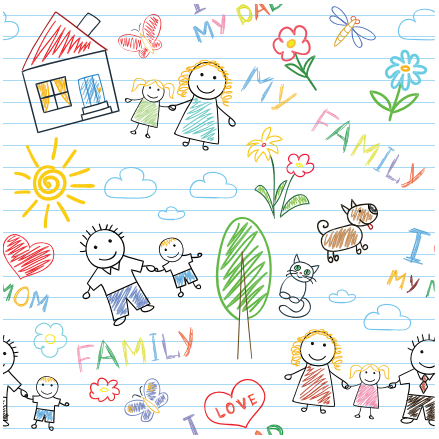
Catherine Lord, Marie-France Marin & Robert-Paul Juster

In our society, we often have the impression that becoming a parent is a natural and sensible milestone among the myriad of events that shape our lives. We also often believe and anticipate that this will be one of the happiest – if not THE happiest – moments of our lives. Ask any parent, however, and they will tell you that the reality is sometimes quite different and that daily life as a parent is not necessarily very glamorous. Attending to, listening to, and fulfilling the every needs and desires of new family member(s) requires an exorbitant dose of adaptation, patience, and commitment. Many adjustments are necessary in order to face the new roles of parenthood, as well the expectations, responsibilities and requirements that come with them. Having a child and starting a family is a reorganization of the ways we are used to seeing and doing things in many different spheres of our lives, ranging from a couple's love life, to relationships with the extended family and friends; not to mention the juggling of one's professional life.

Despite all these changes and challenges, the majority of people will pass through the transitions of parenthood relatively smoothly. For others, however, this period is filled with numerous adaptations that may look and feel like a roller coaster of emotions. For some parents, it is hard to see the light at the end of the tunnel. For these parents, some will seek social support or external help. Sadly for an even smaller number of parents, feeling like you are on the edge of the abyss might be common, without felt social support that could even lead to irreparable acts.

Historically, the science surrounding this phenomenon has mainly focused on the physical health of the child and mother. To date, very few studies have investigated questions related to mental health during this period of transition parenting. This lacuna flies in the face of alarming statistics that report high psychological distress during this period. In the

Recent efforts are continuously investigating how stress and mental health among BOTH mothers and fathers have an impact on their child(ren).



Stress and Perinatality

last few years, we have noticed a growing interest regarding the consequences of maternal stress on children's health, and therefore the importance of good mental health during and after pregnancy. Moreover, a paradigm shift is currently underway for restoring the notions of nobility to the 'family' by including all family members in the research questions. Indeed, recent efforts are continuously investigating how stress and mental health among BOTH mothers and fathers have an impact on their child(ren). During the last few months in Quebec, we have noticed a growing media interest with regards to these important questions. The wall of silence is finally crumbling as the flip side of the coin – that is social isolation, fear of being judged, exhaustion, distress and lack of resources – is becoming fully revealed.

The transition towards parenting is a major daily challenge. This transition exemplifies a situation where needs often exceed resources, which can create distress for all family members. In order to better understand the stressors that affect modern families, some new factors are being studied, such as social isolation, unrealistic expectations that are quite possibly inflated by media sources, lack of an adequate/transferable parental model to match the new realities of parenthood, little interaction with other children (compared to the large yesteryear families), rupture of the nuclear family, and finally lack of resources and support tailored to the realities during this life period. Parental roles are being continuously redefined among individual family cores, but also more broadly by society. This essentially creates a moving landscape where parents must continuously adapt and quickly learn to trust themselves, especially when facing the different mammoths of modern parenting.

The following articles represent an effort to open dialogue concerning stress and its consequences in relation to the birth of a new baby. In so doing, please note that this is voiced without any judgment from the authors and/or the editorial committee.

We talk of perinatality when we refer to the PERIOD before, during, and after the birth of a newborn. To put it otherwise, perinatality represents the period including conception, pregnancy, delivery and some time after, which is commonly referred to as the postpartum period.

In our first article, we present an article that traces the roots that spawned this issue. Dr. Catherine Lord, guest editor for this issue and author of multiple articles, explains where the idea for writing an issue on stress and perinatality came from. Dr. Catherine Lord continues with **our second article entitled "I adore him, but…"** In this article, she dissects the stressful elements associated with perinatality. Will you be able to identify your mammoths or those of your loved ones who are going through this life transition? **For the third article,** Dr. Mai Thanh Tu talks about breastfeeding. So many myths surround this phenomenon and despite the fact that many studies suggest that breastfeeding can have anti-stress properties, we also know very well that it can be the scariest nightmare for many mothers! Catherine Raymond, a Master's Student at the Centre for Studies on Human Stress, then draws a portrait of a young Montreal researcher who is interested in the topic of depression during the perinatal period. In her **researcher's profile** article, Catherine interviews **Dr. Malgorzata Miszkurka** who discusses her main research efforts on this topic. Finally, Julie-Katia Morin-Major, a Master's Student at the Centre for Studies on Human Stress, and Dr. Catherine Lord co-sign **the last article of this issue: a valuable toolbox of resources for your own use or to help a loved one.**

We hope you enjoy reading this issue!

Where Did the Idea of Writing a Mammoth Magazine Issue on Perinatal Stress Come From?

Dr. Catherine Lord (Ph.D.)'s Testimonial
Translated by Anne-Laure Dubé

The idea to publish a Mammoth Magazine about perinatal stress came to me over a period of time that spans much longer than it takes to make a baby! Being a sensitive issue, the approach, the tone, and the content had to be empathetic, nonjudgmental, and comprehensive. The expected goal for this project is quite simple: that a conversation can take place between parents, friends, and health care professionals in a manner that is frank and open and communicated in softness and with full support.

Very little scientific literature has been written on mental health in the perinatal period. Moreover, most of it has been strictly focused on the mother's side of the story. Barely 5 years ago, I could count on my fingers the number of scientific papers that dealt with the fathers' mental health during this period! Since then, this research area changed rapidly and more and more laboratories all around the world are interested by it…the *family* has grown at last! Having worked with families in difficult situations, I could not stand the silence surrounding the issue anymore. My heart was full of emotions that retained the experiences of each and everyone I met: some stories were sad, some marked by courage to face adversity. Overall, they were all unquestionably more touching stories, since they were all deep down inside, tales of immense love! The experiences that I heard at the clinic became entangled with those of my entourage, which raised an increasingly apparent reality for me: once a conversation starts, the door never really closes. In effect, this dialogue has the power to transform the fear of judgment and isolation, which are so present in all the stories; the weight is shared, divided, and ultimately reduced. I hope this Mammoth issue will open a door for you or a loved one, because sometimes all it takes is a nonjudgmental ear that is open to hearing the following: «I adore *him,* but…».

This Mammoth issue represents the fruits of shared stories planted by parents and researchers' experiences and knowledge. It is often said that parents never miss an occasion, at the risk of creating one, to talk about their babies and to relate the newest achievement of their youngest nearest and dearest to them. Dear parents: do not forget yourselves and do not ignore to talk about yourselves as well, since all this "newness" represents something important to your own everyday experiences and the potential challenges this entails. I would like to take this opportunity to thank you for opening your hearts to me as you did, and for trusting me as you did. You let me enter your sacred parents' world and I am very grateful for it.

I hereby open the conversation by revisiting the **NUTS** recipe. Without any further delay, here is the perinatal stress «ingredients» discussed as follows in "*I* adore *him,* but…," infamously featuring **N**ovelty, **U**npredictability, **T**hreat to the ego and, finally, **S**ense of lacking control.

"I Adore Him, But…"

By Catherine Lord, Ph.D.
Translated by Anne-Laure Dubé and Julien Ayotte

If only we could talk about difficulties met as parents, whether they are big or small, without shame and fear of retaliation! Using our famous **NUTS** ingredients, is it possible to highlight that conception, pregnancy, delivery, and the year following birth of a newborn are interwoven events that are likely to be perceived as stressors?

Keeping in mind these life stages affect both mothers and fathers, do you not think there is a lot of **N**ovelty? Are there any moments that can be seen as **U**npredictable? What about the parents' egos? Are they not **T**hreatened? Do you think that the **S**ense of control is kept intact? If you are parents, you probably have your head filled with examples of situations in which there was parental stress due in part to at least one of these ingredients.

Mammoth Magazine followers, we all know that stress has two facets. On the one hand, it is essential to our survival because it allows us to adjust and adapt. However, it can also have a dark side, if it comes at us in constant repetition and chronically over time. Under such circumstances, it then becomes a precipitating factor of different physical and mental health problems. Parental stress can definitely be part of this lifelong equation.

One particularity during this period is the amount of available information concerning a mother's physical health and that of her baby. Tons of books exist, webpages abound, and everyone's advice and opinions are part of the new parents' everyday life. Each and every one of them has some viewpoint and genuinely well-intentioned suggestions about the possible medical complications during pregnancy, delivery, breastfeeding and nutrition, to name a few examples. This flurry of information can in fact even cause additional stress, by the contradicting, alarmist or even stigmatizing nature. Some parents will feel like they were never able to read enough to be a «good» parent, because the sources are ultimately endless! Here is a disturbing fact: during a study about moms-to-be and new moms' opinions, it was shown that 100% of them report that they had felt judged at some stage during the perinatal period! Yet so little information is available about stress and mental health, while it is evident for everyone that stress is a major part of this life transition.

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Knowing how to make the difference and listening to suffering

As mentioned above, it is totally normal and healthy to experience parental stress. Parenting and the roles that it encapsulates are often stressful situations, and it is normal to face challenges in which we feel imbalanced. The key is to learn why we are stressed and to find ways to adapt ourselves. Slowly but surely, this acceptance is about building confidence in our talent to be parents. On the other hand, when stress is repeated and chronic, and we feel less and less equipped to handle what feels like an endless spiral, this is a pretty clear indication that it is time to act. It is often hard to admit that nothing is going right and that we do not recognize ourselves. However, once we identify the sources of our difficulties as parents and seek the necessary help to get us back on our feet, our feelings of isolation can disappear and a light begins to emerge at the end of the dark tunnel.

If we agree that mental health is still one of our society's biggest taboos, then it is not hard to imagine how perceptions regarding mental health during the perinatal period are even worse since everything gets more and more personal and emotional. The severe lack of scientific data on the subject reflects the taboo, the latter being extended internationally. The good news is that an increasing number of research teams are now working on this problem, and we are starting to see promising avenues of intervention concerning this pivotal moment in the lives of parents. For example, it has been unfortunately observed that only 20% of American doctors actually question future moms about possible anxiety symptoms. Thus, several factors can get in the way of detecting potential psychological distress during this period, not to mention the popular myth that maternity is synonymous with happiness for everyone. Some mothers think that worries and torments are normal and expected feelings, while others are afraid to be seen as «bad mothers», fearing to see their child taken away from them as consequence for saying so. The minimization or diminution of distress by relatives and by the actors within the health care system only further fuels isolation and perpetuates these taboos. In addition, the lack of knowledge about welfare services reserved for the families affected by these problems – resources that are as much within the health care system as more broadly in society – can ultimately slow down the recovery process and exacerbate the problem. To be "connected" or to hear another distressed parent is crucial, since it allows us to become more attuned detectors of possible trouble, and to tell the difference between normal parental stress and the type that brings psychological distress that can persist and have a significant impact on family functioning.

However, once we identify the sources of our difficulties as parents and seek the necessary help to get us back on our feet, our feelings of isolation can disappear and a light begins to emerge at the end of the dark tunnel.

Here is a list of different situations:

if you perceive this array of situations as stressful, then tick a box for the N.U.T.S elements that concern you. You can fill the table alone or with your spouse, or perhaps even with yours friends, moms and dads or future moms and dads. This table can also be useful for the professionals who want to know what could be worrying parents. Most importantly, do not hesitate to add the stressful situations you go through as a parent. In analyzing the ingredients of these stressors, you will identify the components and perhaps better understand why you feel distress. This might even allow you to act selectively and keep you well informed. Please note that this table has been developed through multiple interviews with parents and scientific literature, but it is not a diagnostic test. **Above all, remember that the stress recipe is different for each and everyone. Also, all it takes to feel distressed is to taste at least one of the N.U.T.S ingredients.**

	Novelty	Unpredictability	Threat to the Ego	Lack of Sense of Control
We are trying for three months now, and I am still not pregnant.				
I am waiting for the results of my fertility tests.				
Someone will come to my place to fill my adoption file.				
J'ai des pertes sanguines et je suis à 8 semaines de grossesse.				
I have gained too much weight during pregnancy.				
I stopped smoking, drinking and going out to prepare for the coming of my newborn baby.				
I think a lot about the diseases my newborn might get.				
I keep informed about nutrition and the consequences it can have on the foetus.				
Will I regain my regular size?				
Is my child meeting the necessary requirement for the healthiest possible development?				
Do I have all that is needed for the newborn's arrival?				
Will there be any complications during delivery?				
Will the delivery be painful?				
Will my planning/idea of delivery be respected?				
What is my role as a father during delivery?				
Do I come back home right after delivering?				
I did not have a good delivery because…				
I have to change my first diaper alone.				
Will I feel attached to my child?				
I do not produce enough milk.				
My baby is not developing at the right rate.				
And if my baby should die while sleeping?				
I cannot get to sleep, because I am scared to squeeze my baby.				
My baby does not want my milk anymore.				
Kindergarten or family environment?				
I want to get back to work, but relatives think it is too early for me to return.				
My baby does not always sleep through the night.				
I am afraid to not address the needs of my spouse while being a mother/father.				
I am scared of breaking up with my spouse and ending up alone with my kid.				
To be separated from my child for a few hours or more.				

The good news is that an increasing number of research teams are now working on this problem, and we are starting to see promising avenues of intervention concerning this pivotal moment in the lives of parents.

When nothing goes right… remember that you are not alone!

During the perinatal period, when mothers and fathers are awaiting the new family member, many psychological illnesses may arise. These disorders may appear at any moment during or following pregnancy. When that is the case, we talk about anxiety and/or depression during pregnancy and/or postpartum. It might seem like everybody knows about postpartum depression, but we do not necessarily know how to detect it, especially when nothing feels like it is going right. And what about anxiety? You might say that every parent has worries, that this is normal, and that it is a good thing, but up to what point?

Postpartum depression is characterized by the manifestation of depressive symptoms following the birth of a child. It is very frequent and affects 15 to 20% of women who give birth. By contrast, approximately 10% of women will show depressive symptoms at some point during their lifetime. Anxiety will affect more than a third of women during their life, and it does appear to be more frequent during the perinatal period. Some say that a very high level of anxiety during pregnancy strongly predicts postpartum depression.

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People will rarely admit it when they are feeling depressed or anxious. On the other hand, some will say they are feeling downhearted, sad, empty, or numb. Others will talk about how they are incompetent parents, how they are nervous, how they cannot stop thinking, how they have persistent doubts about every parental task they do, how they fear being a "bad mother" or a "bad father", and so on. Some women will compare themselves to other mothers, which can further increase their feelings of inadequacy or incompetence.

Mothers	Fathers
• Intense doubts • Feelings of guilt • Feelings of incompetence • Depressed mood • Sadness • Tears • Irritability • Anxiety, worriedness • Physical symptoms • Excessive medical examinations	• Loss of pleasure, of interest towards favourite pastimes • Irritability • Aggressiveness • Frustration • Resentment • Abandonment • Indecisiveness • Substance abuse • Physical symptoms

Others will express physical symptoms, which is especially the case when people experience anxiety. For example, they will report stomachaches, headaches, backaches, loss of energy, pain, physical/muscular tension, nausea, etc. Some will have sudden shortness of breath, they will be dizzy, have heart palpitations, and sweat spells, that might feel like they are dying; this constellation of symptoms is known as a panic attack.

Another behaviour that should draw your attention during the perinatal period: excessive concerns about your baby's health. When distress is expressed as such, medical consultations and requests for help and support are more frequent than they should be, even if the health personnel maintains that the baby is fine.

Other manifestations could also include a loss of pleasure for the person's favourite activities, a generalized loss of interest, changes in appetite, fatigue, insomnia that is not caused by the baby's rhythms, feelings of restlessness or sluggishness, an urge to sleep all the time, a loss of concentration, unusual forgetfulness, and in the worst cases, suicidal thoughts.

Up to 10% of women will report having psychologically distressing, intrusive and uncontrollable thoughts or mental images, such as viewing themselves dropping their baby on the stairs. These anxious thoughts and images, even if sometimes strange, are normal, up to a certain point. Almost every mother will tell you about that time (if you promise not to tell anyone) when she saw herself throwing or shaking her baby. However, when these thoughts or images are a source of severe distress, it is a very different matter since these thoughts can become frequent, uncontrollable, and vivid. Such thoughts often cause behaviours aimed at compensating or diminishing the associated anxiety. For example, one will repeatedly align the milk bottles in the refrigerator, constantly check over the baby, wash the baby again and again or maybe constantly clean their clothes for fear of contamination. While some of these behaviours are associated with the baby, some are not, such as repeatedly counting series of numbers or doing specific gestures for self-protection. When this is the case, we talk about perinatal obsessive-compulsive disorder.

While both women and men may experience the aforementioned symptoms, some symptoms appear more frequently among men or women. Do not forget to take a look at the June 2011 Mammoth Magazine edition (Number 11), which was dedicated to stress and the mental health of men. Here are some examples of symptoms to look out for in either parent in general. The persistent symptom intensity over time (more than 2 weeks) is a factor to take into consideration:

Even though tragic events such as a mother killing her child will gather a lot of media coverage, it is important to remember that such cases are extremely rare (1 or 2 cases in a 1,000, which represents less than 0.1% of the population). Furthermore, these cases are part of another set of symptoms, the person often being in a psychotic state (losing contact with reality). In most of these cases, the symptoms existed before pregnancy and included delusions and hallucinations. But these should not be confounded with intrusive thoughts in the previously mentioned obsessive-compulsive disorder.

Finally, for parental stress to become bad stress that could leads to subsequent mental health problems, several other risk factors must also be present. Such risk factors include living in a state of poverty with difficulties fulfilling food, shelter and clothing requirements. Another risk factor can occur if one has faced medical complications when trying to conceive a child (infertility, miscarriage), during pregnancy or while giving birth. Even though lack of sleep is part of many hypotheses, actual study results do not clearly identify sleep deprivation as a risk factor.

For the parent, the most important risk factors are: low self-esteem, a more anxious and depressive personality than the norm, relational difficulties, lack of adequate social support (real and/or perceived), and absolute stressors (natural disaster, bereavement, etc.). Personal and family histories of mental health problems, such as depression or anxiety, are also important risk factors too. However, these conditions are not all necessary to develop a mental health problem, and will not always lead to one. For example, you may have no perinatal problems even though you or your mother suffered from depression. Similarly, every

pregnancy is unique, and if you had psychological distress during the perinatal period of your first child, it does not mean that you will relive these difficulties with your second child.

Most of the time, after reading this kind of information, parents want to know if maternal stress can harm the foetus. Stress studies on the effects of stress experienced during pregnancy show that most children are not negatively affected. But some studies show negative effects of stress on the developing brain, with an impact on cognitive, affective and behavioural development. At this point, you must remember that these effects often are sub-clinical, meaning children develop according to the normal developmental trajectories that are expected. And it is good to know that pregnancy stress, in reasonable doses, can have positives effects, likewise stress in general. This field of research is rapidly growing, and many grey areas have yet to be explored. Take, for example, the following questions: what kinds of stressors are beneficial, which ones have negative effects? Are the effects of stress the same during the first, second and third trimester? Will only absolute stressors, or repeated and chronic stressors, be causing harm? For the time being, science has no answers to these questions, so let us keep our eyes open and our ears alert in support of each other.

What could be done? How can you help yourself or a relative?

In this Mammoth Magazine issue, there is a toolbox with available resources for the perinatal period. In it, you will find services for pregnant mothers and new moms. These services, such as *doulas* (women trained to accompany pregnant women and mothers) are common practice outside of Quebec and in the rest of Canada. Other links in the toolbox will refer you to magazines or websites, such as blogs, so as to no longer feel alone, and play down some situations. Finally, there are resources for when life storms rage and medical or psychological services are needed.

In this Mammoth Magazine issue, there is a toolbox with available resources for the perinatal period. In it, you will find services for pregnant mothers and new moms. These services, such as doulas (women trained to accompany pregnant women and mothers) are common practice outside of Quebec and in the rest of Canada.

Regarding medical support, it should be known that some antidepressant drugs are safe for the baby during pregnancy and/or when breastfeeding. When deciding on a treatment plan, a careful consideration of costs and benefits should be discussed with your family and health professionals. Harmful consequences of bad stress and mental health symptoms should be considered for the parent suffering from them, but also for the close family members. After all, would it not be wiser to put all odds on your side towards good mental health, particularly when considering how these symptoms could affect your attachment to the baby, the mental health of the baby and his or her siblings, and the couple and family dynamics? Every person and every family is different, just as how an illness will express itself differently from one person to the next and how it can evolve over time.

In conclusion, it is important to highlight that beyond identifying parental stressors, garnering social support and psychological and medical health resources, more recent studies remind us just how important exercise can be to help. A sound mind in a healthy body! Physical activity, often put to the side during the perinatal period, can be very valuable and we will soon have the pleasure of reading scientific data on the benefits of new activities like cardio stroller, salsa-baby, yoga-baby, etc. Know that when taking up a physical activity for stress coping and physical and mental health, you should choose an activity that you like, that answers your needs and that respects your capacities. It is also crucial that goals be realistic, and intensity should go up gradually and not too strenuously. Thirty-minute periods, a few times a week, seems like an essential part of maintaining a healthy psychological state. Generally, you should consult a health professional before making changes to your life habits.

Physical activity, often put to the side during the perinatal period, can be very valuable and we will soon have the pleasure of reading scientific data on the benefits of new activities like cardio stroller, salsa-baby, yoga-baby, etc.

Every reason to exercise is good!

The benefits from exercising have biological, psychological and social roots, and could potentially have positive consequences on the child(ren). Biologically, exercise can facilitate hormonal balance (homeostasis). Also, endorphins, which are pleasure hormones released during sports, could make you feel better. A number of psychological benefits, such as higher self-esteem and a better sense of accomplishment, could also help lower symptoms of anxiety and rumination, by distracting our otherwise hyperactive detection of threat. Besides, practicing sports with children helps establish and maintain good communication among parents and their child(ren). Moreover, by doing these activities, children learn, through social modeling, healthy life habits that could help prevent childhood obesity among other things.

Other paths to wellbeing can include relaxation techniques, massages, yoga, mental imagery, singing for the baby… there's something for everyone!

Next Issue

Stress and Addiction

Why is it that our bad habits have a tendency to surface when we are stressed? Why do we fall back on smoking cigarettes or binge drinking during periods that are particularly stressful in our lives? And at the very least, if we do not completely relapse, why is the temptation so much stronger? Is it truly a real diehard physiological phenomenon, or is simply the perfect excuse to quench our appetites?

Addiction is a phenomenon that has been studied for plenty of years. Some researchers are particularly interested in understanding the link between these pesky life habits and stress. In our next issue of Mammoth of Magazine, we will provide a biological and psychosocial picture of addiction while examining the impact that stress has on this phenomenon.

To be considered addicted, do we necessarily need to satisfy stereotypes? Can we become dependent on other things than alcohol, drugs, and cigarettes? Is it possible that we could also become addicted to our cell phones, to social networks, video games, or develop a gambling problem? How does stress affect addictive behaviors? Read our next issue of *Mammoth Magazine* to get the answer to these questions and more!

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EDITORS-IN-CHIEF
Robert-Paul Juster, B.A., M.Sc., CESH Ph.D. Candidate
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Marie-France Marin, Ph.D.

EDITORS
Jean Lepage, B.A., Assistant to the Exec. Director
Sonia Lupien, Ph.D., CESH Director

EDITORIAL TEAM
Catherine Lord, Ph.D.
Julie-Katia Morin-Major, B.Sc., CESH M.Sc. Candidate
Catherine Raymond, B.Sc., CESH M.Sc. Candidate
Mai Thanh Tu, Ph.D.

TRANSLATION TEAM
Robert-Paul Juster
Catherine Raymond

DESIGN
Marcel Bélisle, Graphic Artist

Breastfeeding: Stressful or Destressing?

By **Mai Thanh Tu,** Ph.D.,
Researcher at University of Montreal
Translated by **Robert-Paul Juster,** M.Sc., Doctoral Candidate at the Centre for Studies on Human Stress

In Quebec, we have witnessed an increase in births. The annual number of births has gone from 74 000 (average between the years 2000 and 2005) to over 82 000 annual births since 2006 (Institut de la statistique du Québec). This phenomenon coincides with the introduction of an ever more generous and more flexible Quebec regime of parental insurances (Emploi et solidarité sociale, Québec). By contrast during the same time frame, the number of births in the rest of Canada has remained relatively stable, hovering around a grand total of about 377 000 annual births (Statistics Canada). In today's day and age, a panoply of resources and information is available to future parents in order to help guide and prepare them for the arrival of their new family member(s). Among others, we can access information relative to pre- and postnatal health of the mother and her newborn infant, as well as to additional necessities to help welcome home the newborn (ex. clothing, decorations, toys, bedding, accessories) and postnatal recreational activities for parent and infant alike. Information concerning nutrition for the newborn, by breastfeeding or milk prepared using formula are no exception to the list of things to consider.

Human beings are mammals. By simple definition, that means that humans are vertebrates that have the capacity to produce milk to feed little ones. Human beings are the most evolved of mammals and among the only one to actually "choose" whether to use milk by breastfeeding or not to use milk to feed the infant thanks to prepared milk in formula. With this power to choose comes a certain degree of tension: breastfeeding has been and always will be a popular media topic that can arouse a lot of public reactions. On the one hand it is praised for its nutritional advantages during feeding (Public Health Agency of Canada), while on the other hand it is criticized for the social pressures it imposes. In this whole prenatal discourse, we speak very little about difficulties that can arise during breastfeeding and what the delay of a couple of days can mean, let alone a couple of weeks before it becomes easier and efficient for the mother and newborn. Also, we often forget to mention that the decision to breastfeed or not is a choice made with one's spouse and entourage (family, in-laws, friends).

In fact, going through a pregnancy over nearly 9 months, giving birth and then taking care of the newborn represents a series of events riddled with novelty, sometimes unpredictability when we do not always have control, and which can threaten our ego, all of which can be considerably ***stressful***. Following delivery, a mother requires support from her entourage and the decision to breastfeed or not one's child can become an even more difficult experience, particularly if one goes against the opinions of those closest to them. For example, a mother who wishes to breastfeed may feel reticent of doing so and following through over the course of several months in the absence of her spouse's support, or members of the family, or perhaps also friends. On the flip side, a mother who does not want to breastfeed might feel like she is being forced to do so, or at the very least try to, if those close to her are putting pressure. In addition, since we often praise breastfeeding as being the best source of nutrition for a child, many mothers who chose not to breastfeed are subjected to unkind and even derogatory remarks on their role as mothers due to their choice. This will of course further contribute to amplifying their stress levels.

For the majority of mammals, maternal milk is the only source of nutrition for a newborn. It therefore follows that there must be some particular survival mechanisms in place in order to best assure that this process occur among mammals. It is for this reason that animal studies use rats as a model. Science has demonstrated that during the period of lactation (that lasts about 14 days for rats), we observe a diminution of biological reactions to stressful situations among mothers in order to allow them to produce milk for their little ones (baby rats are called pups). Does a similar protective mechanism against stress during lactation also exist among humans? Does breastfeeding modify the biological response to stress? When formula milk is available and therefore renders breastfeeding less crucial for the survival of newborns, *"is breastfeeding biologically stressful or distressing"?* In the next section of this article, we will get a brief glimpse of the scientific research that has been done using animal models and humans in order to answer this question.

Animal studies

Several animal studies conducted in the 1990s allowed us to better understand how natural changes in the physiological state of an individual could influence a stress response. For example, the production and secretion of milk following and during the period of gestation (pregnancy) is associated with a diminution of the biological response to a situation that is moderately stressful (ex. changes in environmental temperature or being in a restrained space). By contrast, in situations where there is a potential threat to the little ones (ex. simulating the presence of a predator), the rats presented a heightened stress response, all in the interest of protecting their little ones. This really demonstrates quite well the presence of an effect that can decrease stress, but that is all the same well adapted to permit the survival of the organism honed towards protecting the little ones once a threat towards them is detected.

Research in humans

Research using breastfeeding women is not as conclusive as studies conducted among animals. Taken together, it seems that women who breastfeed report perceiving less stress and present an attenuated cardiovascular response following a stressful situation induced in a laboratory. On the other hand, the data and results are less conclusive when it comes to potential decreases in the levels of the stress hormone cortisol. First off, it would seem that the cortisol response is less high one hour after breastfeeding when facing a challenge induced in a laboratory, suggesting a punctual and rapid effect. It also seems that breastfeeding has an effect that diminishes the responsivity of the stress hormone cortisol during a physical challenge, such as when running strenuously on a treadmill. *These results suggest that there might be a certain protective mechanism at play that renders breastfeeding "destressing".* Using a stressful challenge again in the laboratory, another study comparing mothers who had no preceding experience breastfeeding (that is, who were having their first child) or mothers who had never breastfed, those mothers who already had experience breastfeeding (2^{nd} or 3^{rd} child) showed a cortisol response only if they perceived a potential disruption of their child's wellbeing. Therefore, it seems that there is a beneficial effect coming from the accumulated experience of breastfeeding throughout successive pregnancies and that this is observed only uniquely with certain types of stressors. All these data collectively demonstrate just how complex the human body is as well as the capacity to react to pertinent situations.

It is important to note that when conducting such studies on stress, we are often faced with a selection bias: the participants are often composed of individuals who are potentially the least vulnerable. Individuals who have important difficulties with mental health, physical health, or who have difficulty are less likely to actually participate to this type of research project. Moreover, given that excessive exposure to stress can harm the production of milk and the interactions between the mother and child, we must ethically use only challenges that are moderately stressful, standardized, and well-known, such as a public speech or mental

arithmetic calculations. Of course, these challenges are a far stretch from the stressful situations of a mother having a young child who must contend to very different stressors on a daily basis. Using a personalized estimation of self-reported stressful events is certainly more realistic, but also equally carries some difficulties, for instance, in comparing the exposure to stress among individuals who may all experience things differently.

So, breastfeeding: stressful or "destressing"? On the biological front, we observe physiological modifications that could cause adjustments to one's stress response in order to safeguard the wellbeing of the child. On the other hand, the choice a mother makes between breastfeeding or using formula milk – which is compounded by the social constraints in which we live – is evidently not going to be destressing at all. To the contrary, this predicament can be extremely stressful.

Did you know that?

Exposure to excessive stress can impede the production of milk and breastfeeding. What can you do in such situations that essentially complicate either the underlying biological processes or maybe even the decision to breastfeed? Here are couple of reflections as examples.

1) Maternal milk can be extracted and used in a bottle just the same way as formula milk. This can be given by the father or another person in order to give the mother a break. Slowly but surely, contact with a newborn during breastfeeding or when using a bottle creates a calming situation that lowers stress as much for the baby as it does for the person feeding the baby. This contact serves to reinforce attachment to the baby.

2) In certain particular medical situations, breastfeeding may be either recommended or not recommended. For example, once a child requires neonatal hospitalization, breastfeeding can permit privileged and unique moments between the mother and her baby. In this situation in particular, this exchange is important as it allows the parent to have an active role in the care given to her child. On the other hand, breastfeeding may not be advised for mothers who carry HIV and who do not have access to anti-retroviral medications, given the risk of transmitting the virus via maternal milk (World Health Organization). Breastfeeding is also not advised for mothers who consume illicit drugs or certain medications that can be transmitted in the maternal milk.

3) Utilization of maternal milk in formula can be problematic in unfavourable socio-sanitary conditions, like the absence of a refrigerator to conserve the milk or when it is difficult to obtain potable water (ex. developing world). In addition, the availability and the costs of formula milk influences the recommendations according to different parts of the world with differing views.

Here are some testimonials from women who were asked to speak about their stories related to stress and breastfeeding. The majority of these new mothers speak of the social stress they felt and faced in their decisions and their success breastfeeding. What becomes apparent when breastfeeding proves to be difficult and painful, sucking does not function correctly and there is a risk of dehydration and potential weight loss for the baby that can of course be worrisome for the parents. Several mothers do not know that they can ask for advice from breastfeeding consultants (CLSCs, breastfeeding clinics in certain pharmacies, doulas and nurse-maids and other individuals from informal networks). Mothers are often faced with stressful situations where they do not feel like they have control. Many mothers try by every means possible to maintain breastfeeding. When this goal ceases to work after several unsuccessful attempts, they often finish by giving up and resort to using formula milk. This stage is sometimes seen as a failure and can cause feelings of deception and an apprehension from the reactions of those surrounding you, even if the child is doing better this way, is no longer getting hungry or dehydrated. For other mothers who have succeeded to surmount their difficulties, they are often met with feelings of relief and diminished stress otherwise related to breastfeeding. I invite you to read these testimonials that demonstrate to what point the decision to breastfeed varies immensely from one woman to another, since it is essentially a multifaceted decision that is often complex.

JH: "Nothing is as calming as breastfeeding. During several months, breastfeeding was difficult and stressful. Now, 16 months later, we are much stronger. We were faced with all the 'problems' mentioned in the breastfeeding books. Granted it was difficult, but we rose to the occasion and won. I was determined to breastfeed my daughter no matter what it took. We will continue until she is ready to stop. I now find this soothing".

MM: "I choose to breastfeed for all the advantages that this could bring to my child, without putting pressure on myself since I was ready to use formula milk if breastfeeding did not work. Everything went well, but I did not notice any particular decrease in stress when I breastfed my child. However, I did notice that contrary to some women in my network who felt an extraordinary attachment to their child while they breastfed, I viewed breastfeeding more as a health choice that was also more practical since I did not have to prepare maternal milk".

II: "At first, breastfeeding was very stressful not only because of the challenges it represented, but also because it was new for me. I have the impression that there were plenty of details that I had to remember and apply with regards to positioning of the baby and how to feed adequately and the instructions on how to relax. There was also this heavy responsibility to feed this little baby that depended entirely on me. The moment things started going less well and she was not putting on sufficient weight, breastfeeding became more stressful. Despite the fact that I had support from my entourage, I had the impression that it was entirely my responsibility to feed her, to satisfy her, and to keep her healthy".

CG: "I had chosen not to breastfeed because I did not like the feeling that this provided me and I did not want to have sleepless nights. I am very happy with my decision and I do not have any regrets. My baby is the type that is not very patient and is always hungry which was the critical factor in my decision. At first, I had decided to try to see if I would enjoy breastfeeding. After my second day at the hospital, I tried breastfeeding my son and he cried a lot, and so a nurse said: "He is hungry". It was at that moment that I made my decision. From then on, I got strange stares at the hospital. I felt I had less support, but it did not bother me. Afterwards, there is indeed a lot of social pressure if we do not breastfeed. It is seen badly".

KL: "I had such a hard time breastfeeding my daughter. I had not realized just how badly I wanted to breastfeed until I realized that I was incapable of producing a sufficient amount of milk. By trying the breast-pump, supplements, prescriptions, two consultants in breastfeeding, two doctors, and several nurses, I unfortunately had to eventually get around by using formula. I can remember how I would hide my item while walking from the store to my home because I felt ashamed that I was not able to breastfeed my daughter and I was afraid of the judgement of other mothers. This situation caused a lot of anxiety and stress for my spouse and for me and I am certain my daughter felt it as well. I continued for 3 months and I eventually accepted that my baby would be almost exclusively fed with formula milk. I hope the experience will be more relaxing during my next pregnancy."

Researcher's Profile:
Malgorzata Miszkurka, Ph. D.
The Science of an Immigrant Mom

By **Catherine Raymond,** B.Sc.,
Masters Candidate at the Centre for Studies on Human Stress

Dr. Malgorzata Miszkurka's studies have revealed the role of several social factors in the development of prenatal depression. Among these are the importance of social support, lack of adequate monetary resources, as well as the domestic misunderstandings and violence.

Arriving in Canada at age of 16 from Poland, Dr. Malgorzata Miszkurka spent several years in the field of biomedical research. Then, in 2006, she made a career shift to deepen the impact of social determinants of health. She obtained a doctorate in public health from the University of Montreal in 2012 under the direction of Drs. Lise Goulet and Maria-Victoria Zunzunegui. Interested in minority populations, Malgorzata Miszkurka addresses immigrant mothers' vulnerabilities and mental health during pregnancy. During her studies, she has also occupied various positions within the Public Health Agency of Canada.

Based on data collected in the hospitals of Montreal during routine examinations in the first trimester of pregnancy, she analyzed a huge database containing information on more than 5000 pregnant women. Focusing specifically on social factors governing the onset of depression during pregnancy, known as prenatal depression, Dr. Malgorzata Miszkurka examined the incidence of this disorder among immigrant women compared to Canadians. Her doctoral thesis reports the results of those analyses.

The thesis of Dr. Miskurka highlights unacceptable statistics. In particular, it reports that immigrant pregnant women have a significantly higher rate of depression than women born in Canada. In addition, different factors seem to cause the onset of mental health problems in these two groups of women. For Canadian pregnant women, the strongest predictor of depression would be inadequate social support, while for immigrant women, it would be the lack of monetary resources.

According to the literature, the presence of prenatal depression is the strongest predictor of postpartum depression. Knowing that postpartum depression can seriously affect the quality of the mother-child relationship, cognition and communication skills of the baby, these results are crucial not only for the mother but also for the development of the child. Indeed, these results help isolate the importance of certain factors to be taken into account when assessing the condition of a woman early in pregnancy, such as measures of mood, social support and monetary resources.

Perinatal care programs would benefit from taking a special sustained attention and focus on the quantity and quality of social support among pregnant women in Canada, and at the lack of monetary resources among immigrant women, knowing that these factors are differential predictors of depression. This could be made possible to better target women who are more vulnerable to developing depression during the perinatal period.

As a safeguard, the researcher also reported that it would be interesting to expand perinatal programs to provide poorer mothers assets at the beginning of their pregnancy in order to reduce the monetary stress and social inequality in children from disadvantaged families. Such procedures would reduce the rate of perinatal depression and thus reduce social inequalities experienced by some children on arrival into the world. In addition, Dr. Malgorzata Miszkurka emphasizes that women who have previously given birth prematurely or who have faced a perinatal loss are more likely to develop depression during their next pregnancy. This information would, according to the researcher, be relevant to collect in a preventive order during routine examination of pregnant women in order to target those who are most at risk of developing perinatal depression.

Another result of heavy consequence that the researcher indicates in her study is the impact of domestic violence during pregnancy. According to Dr. Miskurka, pregnant women, regardless of their origins, who experience violence from their partner during pregnancy present an increased risk of developing perinatal depression. In addition, immigrants who have been in Canada for a longer period seem to be more likely to experience domestic violence compared to new immigrants and Canadians. This may contribute to the higher prevalence of depression among immigrants. Indeed, misunderstanding and violence inside the marriage appear to be important stress factors involved in the development of depression.

As a safeguard, the researcher also reported that it would be interesting to expand perinatal programs to provide poorer mothers assets at the beginning of their pregnancy in order to reduce the monetary stress and social inequality in children from disadvantaged families.

In the near future, Malgorzata Miszkurka will evaluate perinatal programs that are implemented in Canada at this time. She would like to better understand how they work and identify their possible shortcomings in order to adapt them to immigrant populations' needs. According to the latter, that would be a key challenge since immigrant women contribute to the renewal of the population more than the Canadian-born women do. Moreover, according to the researcher, screening for prenatal depression is essential not only for women but also for children who will be born and the wellbeing of other members of the family such as fathers and siblings.

The importance of knowledge transfer

Dr. Malgorzata Miszkurka's studies have revealed the role of several social factors in the development of prenatal depression. Among these are the importance of social support, lack of adequate monetary resources, as well as the domestic misunderstandings and violence. The researcher is aware of the importance of sharing these results with the general public. She would also like to see this project come to fruition in the course of her career by getting involved in knowledge translation efforts for the general public. A first effort in this direction was held in November 2012, at the "Café Scientifique", an event sponsored by the Canadian Institutes of Health Research. This last event was called *"Parenting, stress and mental health: who babysits tonight?"* and has enabled many parents to come talk with experts in a friendly and constructive discussion. Moreover, in order to obtain more information on this event and on related topics, Dr. Miszkurka invites you to visit her French Facebook page titled "Qui garde ce soir".

Tailored Resources… Use Them!

By **Julie-Katia Morin-Major,** B.Sc., Master's student at the Center for Studies on Human Stress and **Catherine Lord,** Ph.D.

MESSAGE TO RELATIVES
Be alert! If a new parent in your network seems to be suffering from psychological distress, offer them your ear and your support and help them find resources to accompany them.

No instruction manual exists on how to become a parent; that is why it is normal to have so many questions. It is natural that the period surrounding pregnancy and child development brings up a large number of questions. In this last section, we want to provide you with a list of resources that will help answer some of your questions and needs. An important way to avoid stress is by accepting help and support from family and friends. In fact, many women AND men will experience a significant level of psychological distress during the period surrounding pregnancy and birth. Remember, you are not alone! Make sure to get the support from your spouse, from the members of your family, and/or from your friends. Furthermore, do not hesitate to use the services that are available to you.

Although there is a lack of services in the area, know that there are nevertheless some important resources that you can use to help you. Do not hesitate to contact them to see if they answer your actual needs and to find the ones that suit you best. Do it for yourself, but also do it for your family members or for close friends. Here are some resources we sorted out for you local to Montreal and Quebec:

Resources offering medical, psychological and community support.	**CLSC** www.sante.qc.ca/listes/ta-clsc **CSSS** www.msss.gouv.qc.ca/repertoires/csss/ **Ordre des psychologues du Québec** www.ordrepsy.qc.ca **Grossesse-secours** 514 271-0554 www.grossesse-secours.org **Réseau des Centres de ressources périnatales du Québec** www.reseaudescrp.org **Association québécoise pour la santé mentale des nourrissons** www.aqsmn.org **For a list of medications allowed during pregnancy, breastfeeding and many other recent and validated medical information** www.motherisk.org **To go grab a coffee in a place designated for parent and children, to listen to a conference with your family or for an à la carte daycare service:** **Parenthèses Montréal** www.parenthesesmontreal.com/en/ **Espace famille Villeray (Activities built specifically for families)** espacefamille.ca
Resources offering services to low-income families, from medical services to food bank and temporary lodging	**La Maison Bleue (For immigrant women and/or living in a highly vulnerable environment (violence, isolation, poverty, etc.)** www.maisonbleue.info **La Maison Kangourou (emergency center for parents in need)** lamaisonkangourou.org/english/ **OLO foundation (provides help to women in difficult socio-economic situations)** www.olo.ca/en/
Books offering more information on mental health and perinatality that were used as references in the writing of this edition of the Mammoth.	***Postpartum Depression: A Guide for Front-Line Health and Social Service Providers*** by Lori E. Ross, Cindy-Lee Dennis, Emma Robertson Blackmore & Donna E. Stewart 2006 published by CAMH. ***Regards critiques sur la maternité dans divers contextes sociaux*** sous la direction de Simon Lapierre et Dominique Damant publié en 2012 aux Presses de l'Université du Québec. ***The pregnancy & Portpartum Anxiety Workbook: Practical skills to Help You Overcome Anxiety, Worry, Panic Attacks, Obsessions, and Compulsions*** par Pamela S. Wiegartz et Kevin L. Gyoerkoe publié en 2009, New Harbinger Publications. (contains information of fathers) ***Dropping de Baby and Other Scary Thoughts : Breaking the Cycle of Unwanted Thoughts in Motherhood*** by Karen Kleiman & Amy Wenzel published in 2011 by Taylor and Francis Group. ***Dérives*** by Biz published in 2010 by Leméac. (Testimonial)
Doula (Maternal support for mother's)	**Réseau québécois d'accompagnantes à la naissance** www.naissance.ca **Mère et Monde – Centre de formation internationale en accompagnement à la naissance** www.formationdoula.com

Breastfeeding Resources	**Nourri-Source** 1-866-948-5160 nourri-source.org **Allaitement Québec** 1-877-623-0971 www.allaitementquebec.org
Blogs and Facebook pages offering information on mental and physical health of parents and kids and more.	**Qui garde ce soir** www.facebook.com/quigardecesoir **Maman pour la vie** www.mamanpourlavie.com **Les (Z)imparfaites** www.lesimparfaites.com **Les chroniques d'une mère indigne** mereindigne.com
Magazines for parents	**Enfants Québec** www.enfantsquebec.com **Yoopa** www.yoopa.ca **Actions Parents** www.fcpq.qc.ca **Parents Canada (Ressources in English)** www.parentscanada.com **Montréal pour enfants** www.montrealpourenfants.com
Documentaires	**"The Business of Being Born"** www.thebusinessofbeingborn.com **"Babies (Bébé(s))"** www.imdb.com/title/tt1020938/ **« L'arbre et le nid »** www.arbre-et-nid.com
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