

# let's talk

## About the Early Years

Early Childhood Development



Report by the Chief Medical Officer of Health

Government  
of Alberta ■

Alberta



**In the first five years,**

children develop the physical, emotional and social abilities that will be with them for life.





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# Message - From the Chief Medical Officer of Health

In the last 10 years we have learned more about human development than we ever knew before. Science is showing us the strong connection between the early childhood years and life-long health, well-being, learning and behavior. It is teaching us that what happens in a child's early years has a long reach forward.

.....

**The purpose of this report is to get people talking and engaged about early childhood development.** Why? Because the prosperity of our province depends on our ability to foster the health and well-being of the next generation; because any child, no matter his or her circumstances, has the right to opportunities that will ensure their ability to grow, develop and thrive; and because, when we invest wisely in children and families we benefit from the constant renewal of people who contribute through a lifetime of productivity and responsible citizenship.

Our growing understanding about the amazing early years in a child's life provides us with a compelling opportunity to re-think what we do to support healthy childhood development. All governments in Canada, including Alberta, make significant investments in their children; however, traditionally more has been focused on children after they enter the school system than before and our investments are primarily targeted to children deemed to be from high risk families. If we wait to intervene until children are in school or even adults, we miss out on the most promising opportunities to create better outcomes for our children. This means that investing wisely in those first five years of life will yield a wide range of dividends for our collective benefit.

All children, but particularly those in early childhood need a safe, nurturing, and loving environment to reach their full potential. Specifically, our children need healthy bodies, which means access to healthy food, places to

run and jump, and adequate sleep; healthy minds, which means access to settings and people who will develop healthy thinking and nurture healthy emotions and spirits; and, the ability of their families to connect to the best resources that will further nurture and make these healthy bodies and minds grow to reach their full potential.

Simply put, the quality of a child's earliest environment and exposure to appropriate experiences at the right stages of development forms the foundation for the course of their life path. Because of this – whether we are parents, grandparents, families without children, community leaders, business owners, farmers and ranchers, teachers, medical professionals, or government leaders – we all have a stake in getting this right. Even better, we can all make a contribution!

We will do the best we can because we love our children, but we also need champions who value the energy, enthusiasm, wonder and connection to the future our children bring. It is my hope this report will serve as a catalyst to engage Albertans in this important conversation. **Let's ask ourselves: are we doing the best we can to ensure positive futures for our children? It is the most important investment we could make as Albertans.**



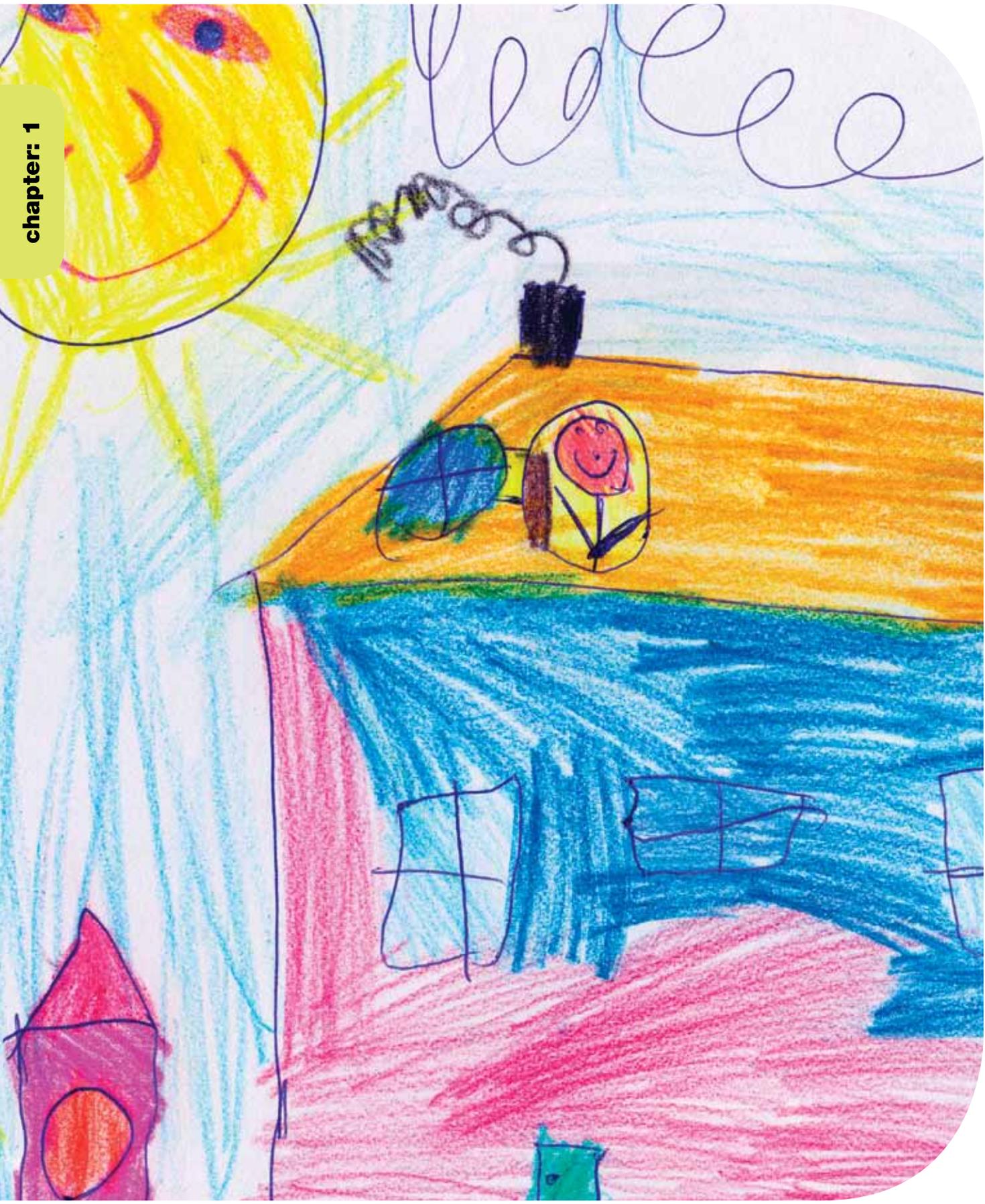
André Corriveau, MD, MBA, FRCPC  
Chief Medical Officer of Health

# chapter: 1

**Let's Talk About Early Childhood Development!**







# Chapter 1 – Let's Talk About Early Childhood Development



Most home videos and photographs tell an amazing story. They capture milestones in a child's early development, including first smile, first steps, first friend and, finally, first day of school.

In the first five years, children develop the physical, emotional and social abilities that will be with them for life. What happens in these earliest years can influence not only their immediate well-being, but lay the foundation for competence and coping skills that affect learning, behavior and overall health throughout their lifetime.

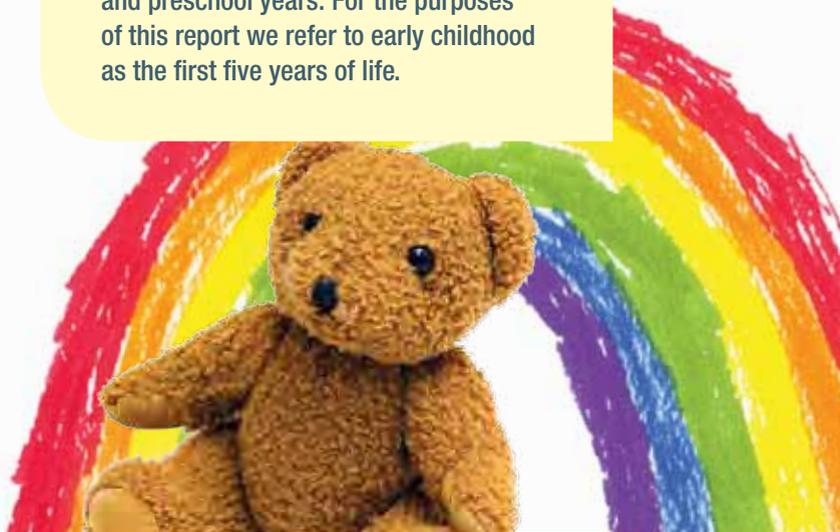
*But what does this have to do with me? As it turns out – quite a lot.*

For many years human development – from birth on – was understood as something that “just happens.” Even today, most of us don't know how development happens or what is going on in a child's brain and body during this process. Early childhood development can seem like the stereotypical “black box,” where some mysterious process is taking place, out of sight. Now because of new knowledge about brain development and healthy child development overall, we are in a position to understand how, when, and by what means early experiences can either positively or negatively influence a child's future. **What we know now is that these first years are more**

**important than we ever thought. As individuals, families, communities and as a government we all have a stake in ensuring healthy early childhood development for Alberta children.**

## What is early childhood?

Early childhood is generally referred to as the period in a child's life before the age of six when their bodies and brains grow rapidly. This includes the infant, toddler and preschool years. For the purposes of this report we refer to early childhood as the first five years of life.



## What is early childhood development?

Early childhood development refers to the many skills, abilities and developmental milestones that children reach – or are expected to reach – by certain ages in their first five years of life. These milestones include walking, talking, sharing with others and caring about others.



## What we know... the science of early childhood development

**We are currently on the leading edge of a revolution in the science of early childhood development.** A growing body of evidence from cell biology, neuroscience and birth cohort studies has greatly expanded what we know about the early years and offers opportunities we did not appreciate even as recently as a decade ago. This evolving science has given us a much better understanding of human brain development

and the interconnectedness between a child's environment and his experiences as a result of that environment, from conception onwards. It is showing us the strong connection between the early childhood years and a person's life-long health, well-being, learning and behavior. We are learning that what happens in a child's early years has a long reach forward.

## A child's early environment matters

**A child's early environment has a vital impact on the way their brains and bodies develop.**

Every baby is born with billions of brain cells that represent life-long potential. However, proper development requires that these brain cells connect with each other in a step-by-step, prescribed order. Simple pathways, such as those needed for vision and hearing develop first. More complex pathways associated with higher level abilities such as early language skills and then higher thinking functions follow. There are especially sensitive periods in this process that represent a window of opportunity for these pathways to develop as they should and their associated developmental milestones to be achieved.

When children learn to expect positive experiences, like being soothed and comforted when they are distressed, their brains create new pathways. These pathways give them the ability to calm themselves when they are upset and soothe themselves when they are put down to sleep.

Small differences in how much a child is read to and talked with each day can hugely impact their language development. By school-age, the child who has heard the most language will have heard approximately 30 million more words than the child who has heard the least. For healthy development, children also need the very basics of good nutrition and opportunities for healthy physical growth – a healthy and balanced diet to build muscles and bones and strengthen the heart and lungs, as well as regular physical activity that helps them to develop gross motor skills and reach important milestones, like running, kicking, throwing and swinging.

*Simply put, the quality of a child's earliest environment and exposure to positive experiences at the right stages of development has a strong influence on the course of their life path. Ensuring the right conditions in the early years is more effective and far less costly than correcting problems later.*



## The gap between what we know and what we do

In Canada, fewer than five per cent of children at every socio-economic level are born with known limits to their development. By school age, more than 25 per cent of children are behind where they should be in their physical, social, language or cognitive development. In other words almost all children are born with a strong potential to grow, learn and thrive but by school age many, approximately one in five, have lost ground.

When children start school and can't hold a pencil, follow instructions or get along with other children they are said to be "vulnerable." Not surprisingly, children from poor families are more likely to be vulnerable than are children from higher income families. What is surprising is that vulnerable children also come from middle and upper income families in large numbers. While the middle class has a smaller percentage of vulnerable children overall, there is a much higher number just because of the size of the middle class in Canada and Alberta. What this should tell us is that no specific population group can be exclusively targeted for intervention in the early childhood years – either by income, ethnicity, family risk factors or other traditional risk factors. Vulnerability cuts across all groups.

## Investing in early childhood development

**In five short years – a fraction of a normal lifespan – a child develops the physical, thinking and language, emotional and social abilities that will stay with her for a lifetime.**

We now know that children's early experiences and the environments in which they explore their world can influence all aspects of development. Positive experiences and healthy environments, for the most part, contribute to life-long health, learning and well-being. Negative experiences and "toxic" physical and social environments can disrupt development and put a child on a more difficult life path. The costs of these disruptions are borne, not only by the child and her family, but ultimately by all of us.

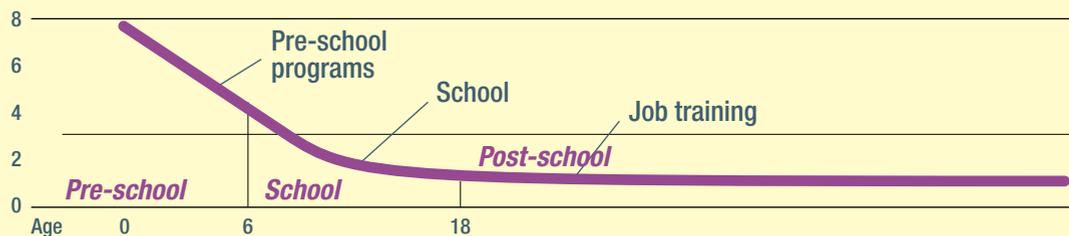
Early intervention is cost effective; in other words, we can pay now or we can pay more later. The return for investing in the early years of our children is significant. Healthy children are more likely to become hard-working, creative adults who contribute to a strong economy and the quality of our communities and our society overall.



All governments in Canada, including Alberta, make significant investments in their children; however, traditionally more has been focused on children after they enter the school system than before and our investments are primarily targeted to children deemed to be from high-risk families.

If we wait to intervene until children are in school or even adults, we miss out on the most promising opportunities to create better outcomes for our children. This means investing more and investing wisely in those first five years of life.

### Rates of Return to Human Development Investment Across All Ages (Return per \$ invested)



**Source:** Curha et al., 2005. A dollar invested in early childhood yields three times as much as a dollar invested in school-aged children, and eight times as much as a dollar for adult education.

## Let's Talk!



“I love to watch children grow and become the people they were meant to be. It’s an amazing time of life. Babies are so totally dependent, and yet they change so much week by week, you can actually see the changes happening. By the time they are about 16 months the changes don’t seem so rapid but you know they’re maturing physically and emotionally, and growing intellectually. My favorite age is when they’re around four or five years old. That’s when they really start to show you who they are ... and they’re so smart then! It’s amazing to see how they figure things out. I think the most important thing for children in the early years is to feel secure, so they can explore their world. I wish there was something I could do to make sure all children feel safe and loved ...”

*Loretta, mother of five, grandmother of seven and great-grandmother of three*

*The public conversation about early childhood development often focuses solely on family responsibilities without factoring in our collective responsibility.*

Intuitively, though, we understand that we're all in this together. We know that what affects one part of Alberta society ultimately affects all of us. This means we all have a stake in making sure *all* our children have the best possible start in life.



The purpose of this report is to get people talking and become more engaged about early childhood development. We invite parents, caregivers, teachers, family support workers, businesses, corporations and all levels of government to ask a different question. Rather than, "What can families do to raise happy and healthy children?" we need to ask, "What can we do – together – to ensure all Alberta children have opportunities to grow, develop and thrive?"

To get the discussion going, we need a common starting point. First we need a common understanding of the science of early childhood development. This growing body of knowledge will point the way to effective action. Second, we need to view our investment in early childhood development as having long-lasting and far-reaching returns. Third, we need to recognize and focus on the gap between what we know and what we do. Finally, we need to find better ways of working together to close that gap. By providing support to young children and families that is grounded in what we know, we can make significant and lasting improvements that will benefit all Albertans.



## How to use this report...

### 1. THINK about it.

As you read through this report, think about what you can do to help all our children be the best they can be. Here are some questions to get you thinking.

- Why is early childhood development important? Why is it important to me?
- What do families need to provide healthy and stimulating environment for young children?
- How does my community help to raise our children?
- What information do we need to make good investments in early childhood development?
- What outcomes for early child development should be important to us as a province?
- How can we close the gap between what we know about early childhood development and what we do in our families, communities and province? What evidence-based strategies should we use?

### 2. TALK about it.

- Share this report with others and then talk to them about it! Use the questions in Step 1 above – or come up with your own – to start the discussion.
- Send a letter to the editor.
- Start an online discussion or get involved in an existing online discussion.

### 3. ACT.

- Consider who and how you might bring people together. Are you part of a parent group or neighbourhood association? Are you a business owner or manager? Do you belong to a professional association with an interest in children and families? Are you an elected official or do you work for an order of government?
- Brainstorm ways that your group can promote and support early childhood development. See Chapter 6 for a helpful framework to help you plan.
- Decide on one or more specific actions and commit time, resources or whatever is necessary to make it happen!

### 4. TELL other people what you're doing.

- Visit [www.health.alberta.ca/about/OCMOH-Reports.html](http://www.health.alberta.ca/about/OCMOH-Reports.html) to share your stories and ideas with other Albertans.

### 5. SMILE when you see a parent with a child.

If you can, lend a helping hand. Holding a door for a parent with a stroller, or helping to load groceries in the back of the van while the parent buckles in a young child, can say a lot. Our families and children need to know they are valued and important to you and to Alberta.



# chapter: 2

**What We Know (Now)  
About Early Childhood Development**







# Chapter 2 – What We Know (Now) About Early Childhood Development



Imagine that there was one thing we could do to prevent heart disease, diabetes, obesity and a host of other chronic health conditions.

**What if, with the same “magic pill,” we could prevent the personal and social tragedies of alcoholism, drug abuse and mental illness?**

What if we could reduce rates of teen pregnancy, delinquency and social services involvement among our young people? What if, at the same time, we could significantly reduce learning problems that keep children from reaching their full potential and instead boost their educational achievement and career prospects? This may sound like an unreachable dream, but it isn't.

While there is no such magic pill, science is showing us more and more that what happens in early childhood can have major impacts in all of the areas mentioned above. In this chapter, we let science tell the story of early childhood development. Anyone who has watched a child grow and develop from infancy to school age already knows this is an amazing journey.

## How development happens... laying the foundation

Human development begins before birth and continues throughout life. The process has been described as a little like building a house. It starts by laying the foundation and then framing the walls, wiring the electrical system and installing the plumbing – all in predictable and predetermined steps. Any builder will tell you the foundation is the most important part of building a house. A strong foundation will support the house for a whole lifetime. A weak foundation, on the other hand, is difficult and expensive to fix and over time can create any number of problems.



## Early environments and early experiences matter

**A child's brain is built over time in a step-by-step prescribed order, starting with the simplest pathways that connect different parts of the brain.** Sensory pathways, like those needed for basic vision and hearing develop first. These are followed by the pathways for early language skills and then those for higher thinking functions. Our genetic makeup supplies the basic plan for brain development, determining when these connections are made, but the number and strength of these connections are shaped by the child's environment and early experiences.

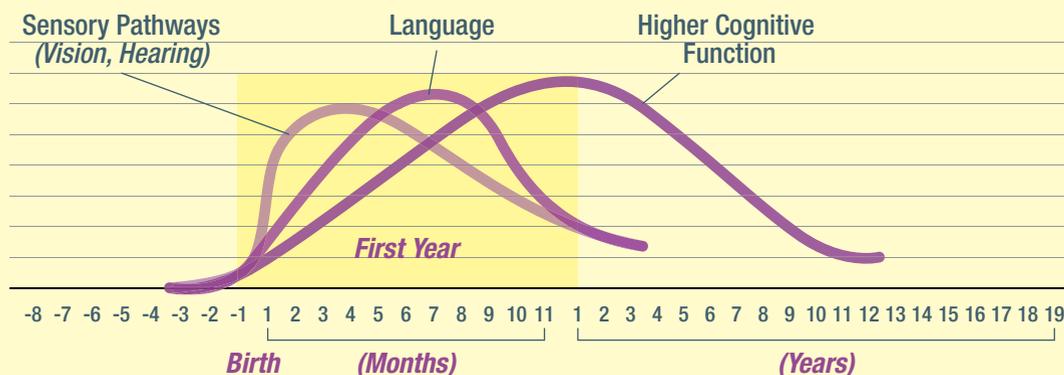
The quality of a child's early environment and the availability of positive experiences at the right stages of development are crucial in determining the strength or weakness of the brain's developing architecture and the resulting outcomes for healthy physical, thinking, social and emotional development. Beginning in utero and continuing throughout the first years of life, there are periods when the developing brain is exceptionally sensitive to the positive or negative effects of this immediate environment.

*A positive environment with adequate nutrition that is free of contaminants and filled with social interactions with caring, attentive caregivers prepares the architecture of the developing brain to function optimally.*

Conversely, an early environment with poor nutrition that contains harmful toxins, or is deprived of appropriate sensory, social, or emotional stimulation results in weak brain circuitry. Once established, this weak foundation can have detrimental effects on further brain development even if a healthy environment is restored at a later age. Building more advanced thinking, social, emotional and physical abilities on a weak initial foundation of brain architecture is more difficult. In other words, once weaker connections are embedded during a sensitive period of brain development, it is more difficult to change them. It is always best to get things right from the beginning.



**Figure 2-1: Sensitive Periods in Early Brain Development**



### Nurturing relationships are essential

It has been stated that young children experience their world in an environment of relationships, and this is certainly true. The quality and stability of a child's human relationships in the early years provide the scaffolding, so to speak, for a wide range of later developmental outcomes that really matter – self-confidence and sound mental health, motivation to learn and achievement in school, the ability to control aggressive impulses and resolve conflicts in nonviolent ways, the capacity to develop and sustain casual friendships and intimate relationships, and ultimately to be a successful parent themselves.



## Building the foundation for future relationships

**Children don't grow and develop in isolation, but in relation to their family, their home and larger community.** A child's family provides the first environment in which they will interact. A parent's ability to make this environment nurturing and positive can be associated with many factors including the resources the family has to devote to child-raising; parenting style; and knowledge of appropriate developmental milestones which shapes parents' expectations and the nature of their interactions with their children.



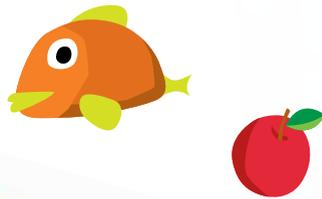
“Young children who have hundreds of experiences of someone reading to them have pleasant memories that involve books. Reading and books are associated with safe and happy times spent with parents and other caregivers. When they come to school, these children have a sense of calmness and security when they are learning to read. In our (city centre) schools, we see kindergarten children who have never seen a book. Why is that important? Because we now know that learning causes stress. Children who do not have positive experiences with books and reading have a very different reaction when they first confront books and printed words. Their brains trigger stress. They are in a heightened, constant state of anxiety when they are trying to learn to read.”

*Nancy Petersen, Principal Coordinator,  
City Centre Education Partnership*

If you watch a new parent with an infant, you are actually watching an amazing process of learning and development. Most young children naturally reach out for human contact in different ways, including crying, babbling and making faces. Dad responds to the gurgles and yawns with coos and

smiles. Mom soothes the crying infant with soft words and nourishment. The baby stretches out his arms, babbling and eventually rewarding his parents with a first smile! Experts in early childhood development call this dynamic “serve and return” – and it is critical to early development.

*At work in the “serve and return” process is the interaction of genes and experience that not only shape and modify the architecture of the developing brain, it is a key ingredient in forming relationships between young children, their parents and other caregivers. When we respond appropriately, the child learns to form secure attachments, explore her world, control emotions and care about other people. At the same time, we learn about our children by watching how they respond to new experiences, new people and new places. It’s a little like playing tennis. Someone has to start the game by putting the ball over the net. To keep the game going, the other player has to return the ball. It doesn’t matter who starts the game; it just matters that someone serves... and that someone returns!*

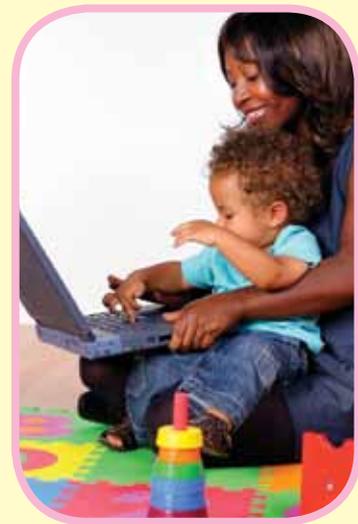


## “Techno Babies”

With technology driving so much of life today, it's hard for parents not to feel their children will be left behind if they aren't “plugged in” early. Parents and caregivers are confronted with a vast array of educational videos and other devices that promise to increase vocabulary, boost intelligence and prepare children for the digital world. In the first few months of life, some infants end up with more screen time than face time. As they move through early childhood, their busy hands can be filled with electronic games and mini-computers. While there is nothing wrong with these electronic experiences, *per se*, they should never replace interaction with real people.

Studies show that educational videos have no impact on early language learning. Indeed, the best way to help children learn new words is just to talk to them! Further, the Canadian Pediatric Society says preschool age children should spend no more than two hours a day looking at a screen – *any* screen. The reason? Screens limit the “serve and return” experience. Young children learn best when they can see, hear, taste, touch and smell their world – and when their world responds in the same way. DVDs and electronic devices, at best, engage children only in hearing and seeing. They also take away the opportunity to walk, run, climb, throw, touch and be hugged – activities necessary for physical and mental development and lifelong health.

Does that mean families should get rid of *all* screens and digital devices during children's early years? Hardly. Like anything, the key is balance. A video while the family prepares supper or a hand-held game for an hour of entertainment on a road trip can give parents, and children, a needed break. The key is to put screens and devices in their proper place. Nature has already supplied the perfect “device” for early learning – and it's you!



## Young children need each other... the importance of play

**It turns out mom was right when she said “go outside and play, it’s good for you!”** Early learning educators and kindergarten teachers have known for a long time that play promotes social development – children learn to take turns, to solve problems, how to be a friend and to do things together in groups. And it’s common sense for most of us that vigorous outdoor play contributes to physical health and fitness – to strength, coordination, endurance and flexibility. Most of us have happy memories of play in the outdoors, where we were free to run around and shout at the top of our lungs. The outdoors, and in particular natural outdoor environments, stimulate and sustain play, as well as promoting higher levels of physical activity.

**Recent research not only confirms this common sense understanding of the value of play, but points to another essential role of play in children’s development.**

Play builds emotional resilience – adaptability, self control and confidence. The feeling of freedom and being *care free* that we experience when we play contributes significantly to mental health in childhood and beyond. Play frees us from the cares and worries of day to day life and, it builds the brain’s capacity to cope with the stresses of everyday life – to “roll with the punches.” The more we play, the better we are at adapting to change. Play produces novel behaviors. It is the source of human innovation.

Another bit of common sense is that *children learn through play*. There is growing understanding that play creates a foundation for formal learning. The connections between make-believe play and early language and literacy development are well supported in research. In pretend play, children explore the idea of symbols. They practice making one thing “stand for” something else. A banana represents a phone, in much the same way as a word represents an object and eventually an idea. These are the skills needed for reading and writing.

When children make up stories and act them out in their make-believe play, they are using what is called the *executive functions* of the brain – memory, planning, initiating and following through on ideas. Children exercise both social and emotional self control when they have to wait their turn or stay hidden in a game of hide and seek. In fact children often show greater self control during play than at other times. Researchers have also observed that in pretend play, children use more complex sentences and vocabulary than they would ordinarily use. In the words of Lev Vygotsky, a noted 20th Century developmental psychologist, in play the child is “a head taller” than himself.



**The evidence is clear. Play nourishes every aspect of children’s development – it feeds growing brains as well as growing bodies; it nurtures the spirit. What can parents, teachers and other adult caregivers do?**

**Take time to play with children.** Return to the simple pleasures of being outdoors in all seasons. Look for opportunities that free the spirit – fly a kite, go on a picnic, take a walk and collect rocks. Play is spontaneous. Remember to let the child lead. In order for play to be play, the player – the child – must be in control.

**Make time for children to play with their friends.** Remember that the benefits come from unstructured, spontaneous free play – the kind that children control, rather than the kind that is organized by adults. This kind of play is messy, noisy and silly. Its benefits may seem contradictory. For example, the experience of vertigo, which children desire so much in childhood – dizzying, spinning, chaotic motion – actually exercises the inner ear and builds a sense of balance. Quite the opposite of what one might think.

**Remind yourself that play has no goal.** This is challenging for a society so fixated on achievement and a work ethic. Children play for the pleasure of playing, their only purpose to keep the play going. Play is a bit like a weed in a cement sidewalk – it actually thrives in the cracks in adult organized time and activities. Children have a strong and instinctive desire to play. They know it’s good for them.

*Jane Hewes, PhD, Chair, Early Learning and Child Care, Grant MacEwan University*

## Healthy Development Disrupted

### Toxic environments

**Stress is an inevitable part of everyday life and a certain amount of stress that is controlled and short lived is necessary for young children, for example when they attend a new day care, are introduced to new people, or have a toy taken away from them.** This kind of stress is considered positive and normal. Learning to cope with it is an important part of the development process.

Negative or stressful experiences that are more intense but still relatively short lived are considered to be tolerable stress for children. Examples include the death of a loved one, a frightening accident or family disruptions such as parental separation or divorce. As in situations of positive stress, support from parents or other concerned caregivers is necessary for children to learn how



to cope with, and to respond to, stress in a physically and emotionally healthy way.

The beneficial aspects of stress diminish when it is severe or long enough to overwhelm a child’s ability to cope effectively. When infants and young children live in homes where caregivers suffer from

mental illness, addictions or domestic violence, they are at increased risk for unpredictable, neglectful or abusive care. It is important to stress that high conflict of any type, but especially the kind that can occur between parents, often in situations where they are terminating their relationship, is extremely toxic for children. In all these situations, both the basic physical and emotional needs of children may not be met. In these situations, the child's stress system is constantly set to "high."

When a child is raised in a constantly stressful environment – including unsafe and neglected neighbourhoods – we refer to this as "toxic stress." Toxic stress is *not* good for anyone, but more so for the developing child. Intense and prolonged stress can lead to a variety of short and long-term negative health effects. It can disrupt early brain development and compromise functioning of the nervous and immune systems. This kind of childhood stress is linked to problems later in life including alcoholism, depression, eating disorders, heart disease, cancer and other chronic diseases.



### When good stress goes bad!

Toxic stress is particularly harmful during the first years of life. During this phase of rapid brain development, the young child's brain is extremely sensitive to experience. Experiences that are chronically disruptive, abusive, neglectful or unpredictable, flood the brain with harmful chemicals. In large, persistent doses, these chemicals impair the growth of neurons and make it harder for the brain to form healthy connections. In this way, toxic stress leaves lasting biological damage on brain structure and function.

The chronic activation of the stress response caused by toxic stress affects two major brain regions: the hippocampus and the prefrontal cortex. These brain regions are particularly important to the development of memory and self-regulation, and both are needed for school and social success. Over time, the effects of toxic stress on brain structure and function can make children more rigid and less capable of independent problem solving.

The changes in brain structure and function caused by toxic stress are cumulative. Not only does toxic stress affect brain development during a given stage, it affects the next stage and all other stages that build on earlier development. Like a brick wall, when one brick is set badly the whole structure is affected. Harm builds upon harm.

*Gerry Giesbrecht, PhD, RPsych,  
University of Calgary  
Nicole Letourneau, PhD, RN  
University of New Brunswick*

## Parental mental health and family stress

**Parental stress and maternal depression, which is especially common during women's childbearing years, are other significant factors that can disrupt healthy development.**

Depressed mothers are more likely to be inconsistent and less effective in their parenting and discipline behavior. In addition, maternal depression is linked to increased marital and family conflict which contributes to high levels of distress for children in these family situations, putting at risk the child's healthy social and emotional development.

We know that women who have a history of depression before becoming pregnant are at higher risk for postpartum depression. We also know that women who are immigrants and refugees are more susceptible to mental health difficulties, including postpartum depression. Despite what we know, a recent study found that only 38 per cent of family physicians and obstetrician-gynecologists talk about mental health with their female patients in the childbearing years. We may be missing important opportunities to help women and their babies during this critical time of development.



**Postpartum depression** affects 10 to 15 per cent of new mothers. It can begin any time between delivery and one year after birth, and last for several months or longer. A mother who experiences postpartum depression may feel ambivalent or even negative about her baby. Not only are basic needs for nurturing, health and safety compromised, these negative experiences can have a significant impact on brain development. For example, the quality of the infant-mother relationship can influence gene expression in areas of the brain that regulate social and emotional function and can even change brain structure.



### A million ways to keep our children safe!

Despite everything we now know about how children develop, injury in the early years can change a child's future in an instant.

Knowledge of the magnitude of the injury problem and types of injuries is fundamental to designing effective programs and policies that will keep our children safe in the early years. An example of such a program in Alberta is the Million Messages program which is delivered by community health nurses at routine immunization appointments (for example, two months, four months, etc.) to give parents age-and-stage related information to prevent injuries in their young children. The focus of the Million Messages program is on those injuries that happen most frequently and are most likely to cause death.

*Brent Hagel, PhD, Faculty of Medicine, University of Calgary*

## Childhood injury

Injury is a leading cause of death and disability in the early childhood years and into early adulthood. In Alberta in one year (2008), there were 17 deaths, over 700 hospitalizations and 28,628 emergency department visits for children under five years of age. What should be of concern is that Alberta has higher injury rates and associated costs than other parts of the country.

The causes of injuries in the early years of childhood vary across the ages and stages of development. In the first year of life, the most common causes of injury are falls, choking, motor vehicle events and issues related to infant crying, particularly shaken baby syndrome. As toddlers start to explore their world, the main causes of injury are scalds, poisoning and choking. In the preschool years children are more likely to be injured in falls or events related to traffic – that is, crossing streets, cycling and improper use of car seats (including booster seats).



## Environmental contaminants

**Environmental contaminants are all around us. They can be found in the air we breathe, the water we drink, the places we live, work and play and the food we eat.** Very young children are especially vulnerable to harmful environmental contaminants for a number of reasons. Children's bodies take in proportionately greater amounts of environmental contaminants than adults and their rapidly developing organs are especially vulnerable. Since children naturally crawl and play on the floor they are in more direct contact with areas where some contaminants may accumulate, and they are more likely to ingest those contaminants because of their normal hand-to-mouth behavior and play.

Children's organs including their brain, lungs, and reproductive system begin developing before birth and continue to develop throughout childhood. Organ growth occurs in spurts, and it is during key growth periods when organ systems are most vulnerable to permanent damage. The consequence of exposure to harmful contaminants is far reaching. A child exposed to chemicals, such as lead or mercury at key periods of brain development, potentially faces lower intelligence or increased behavioral problems that can be irreversible. Exposure to insecticides has also been associated with developmental disorders and delays in mental development.

To reduce the impact of environmental contaminants on healthy childhood development we all need good information to help us make healthy choices for our children. At the same time, we all share responsibility to reduce the chemicals and contaminants in the environment, for example, by choosing less toxic products where possible. Industry and governments can provide leadership for healthier alternatives, such as was done in the reduction of lead in gasoline and paint, banning exposure to second-hand smoke, and restrictions in the use of asbestos.

There are hundreds, if not thousands, of potentially harmful environmental contaminants out there, and it is hard not to become overwhelmed in our efforts to protect our children. Remember that even small, inexpensive actions can have a big effect. By using common sense we can go a long way to reducing those everyday exposures and improving our children's chances for healthy development.





### Reducing exposure to common environmental contaminants

Positive actions don't have to be expensive, stressful or complicated. In most cases a simple common sense approach will go far to reducing harmful exposures. There are some simple things that caregivers can do to reduce exposures to common environmental contaminants. Here are some suggestions:

- Wash children's hands when they come in from playing outside and before they eat
- Make sure homes are free of mold and clean surfaces regularly to keep dust down
- Wash fruits and vegetables thoroughly with water before serving them to children
- Store and use common solvents, like nail polish remover and paint thinners, in well-ventilated areas and away from children
- Microwave food on glass or porcelain plates rather than plastic
- Fish is a healthy source of protein and other nutrients but some species can be higher in environmental contaminants such as methylmercury, so be aware of which fish are lower in these elements
- Run water taps for about a minute first thing in the morning before preparing children's meals or infant formula, particularly if you live in a house built before 1990
- If you use a water filter or other point of use water treatment device (including a Britta filter) make sure you maintain it regularly

*Karina Thomas, PhD, (and mom) Alberta Health and Wellness*

*While many environmental contaminants have exotic and complicated names that sound threatening and confusing, nicotine from cigarettes and alcohol consumption when pregnant are perhaps the most damaging of all.*

High levels of nicotine exposure before birth, as well as exposure to second hand smoke in babies and young children can result in long-term cognitive impairment and decreased physical development overall.



### Children & second-hand smoke

Mothers who don't smoke are healthier. They have easier pregnancies and deliveries, and recovery after birth is faster with fewer complications. Babies whose mothers are smoke-free are more likely to be born full-term, be healthy at birth, and stay healthier as they grow.

Second-hand smoke is harmful for everyone, but it's especially harmful for babies and young children. The chemicals in tobacco smoke get into curtains, carpets, toys, furniture, walls, car seats, clothing, skin, and hair. They stay long after the cigarette has been put out. It's not enough that the smoker doesn't light up when your child is there. If your child is in a room, house or car where people *usually* smoke, he will be exposed to the harmful chemicals in smoke.

*Canadian Lung Association*

Alcohol can produce devastating disruptions to early brain development with the most well known outcome being Fetal Alcohol Spectrum Disorder (FASD), the name for a range of harms caused by alcohol use during pregnancy. These harms can include brain damage, vision and hearing problems, slow growth, and birth defects. Brain damage can mean the child will have life-long learning disabilities and problems with memory, reasoning and judgment.



## Fetal Alcohol Spectrum Disorder (FASD)

FASD is one of the leading causes of developmental disabilities in North America. In Canada it is estimated that nine in every 1,000 babies are affected with some form of FASD. This equates to more than 3,000 babies every year. In Alberta alone, an estimated 23,000 people live with it, and every year 360 more babies are born with FASD.

## Let's Talk!

**Healthy early childhood development emphasizes all areas of development.** You can't do one without the other! Physical health is closely intertwined with emotional well-being, social competence and thinking abilities. Together, they are the bricks and mortar that form the foundation for healthy human development – from infancy through adulthood.

The abundance of compelling scientific evidence now emerging about early childhood development not only increases our understanding of what happens in early childhood, it also points to the actions we need to take to close the gap between what we know and what we do. Intuitively we know how to create stronger foundations for children's healthy development that will make a tangible impact. It starts before birth and it extends to positive, nurturing environments for children that shore up the brain's architecture, fosters "serve and return" relationships, and ensures buffers of support to make stress more tolerable.



**No single program approach or manner of service delivery has been shown to be the "magic bullet". However, at its simplest, we need to put serious consideration into developing children from birth through their first five years with quality programs that are broadly available to all children who need them.**



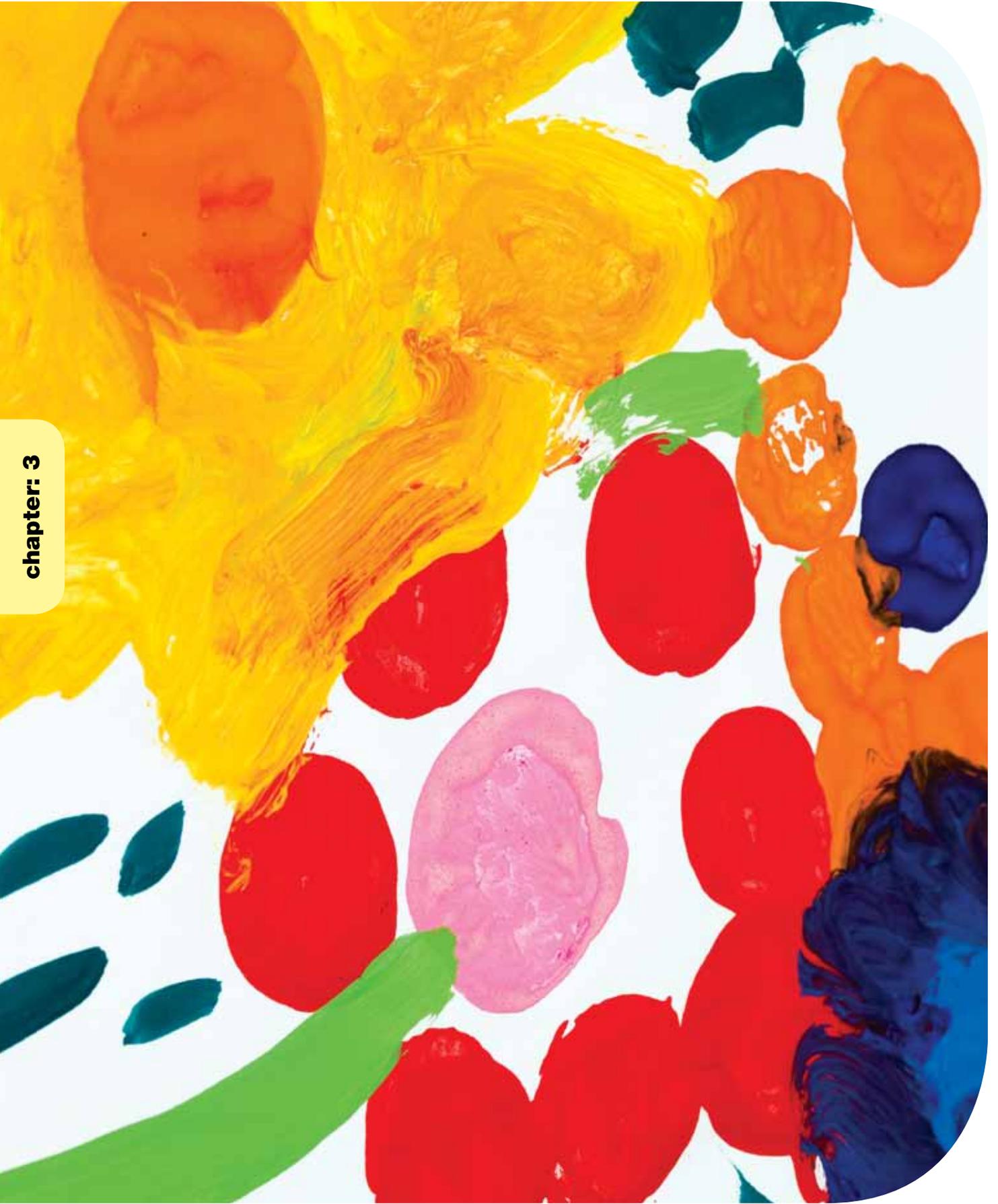
# chapter: 3

## Our Changing Alberta Family





**chapter: 3**



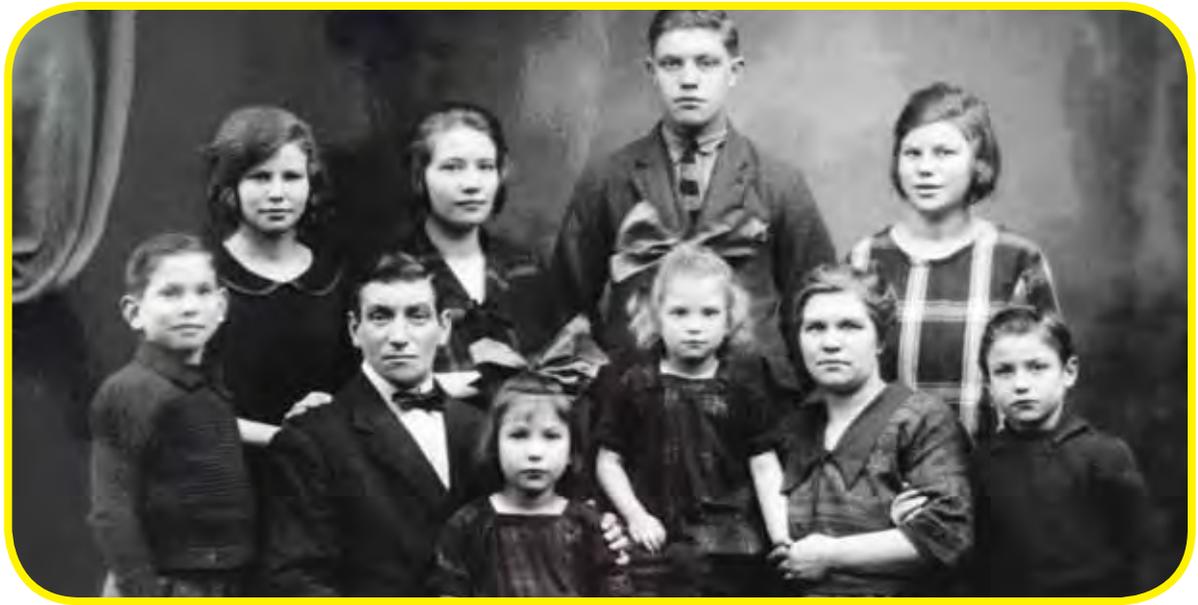
# Chapter 3 – Our Changing Alberta Families



Families are both a powerful symbol and practical demonstration of how we accept responsibility for each other.

A family's first responsibility is to meet the basic needs of its members for food, shelter and clothing. Many families also add new members, socialize children and, perhaps most importantly, provide loving, nurturing and safe environments where individuals can grow and thrive. When asked, most of us say that family is the most important thing in our lives and there is nothing more important to us than the well-being of our family. Most people also recognize that families are the foundation of our communities and our society as a whole.

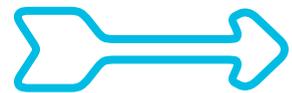




## Alberta Families - how we are changing

Alberta is increasingly an urban province with at least 80 per cent of us now living in and around large cities. In a previous era, as recently as two generations ago, the majority of families lived on farms and in small towns. Family and community structure was very different. Young parents were more able to benefit from the support and guidance of their neighbours and extended family members including grandparents, aunts and uncles who were more likely to reside nearby. Families needed to rely on each other and did so; communities were closely knit acting almost as an extension of one's immediate family to support and nurture young children. This happened almost naturally in the context of community social gatherings where families as a whole, of all generations, gathered together.

## How families look today



**In Alberta today there are over 900,000 families. Children under the age of 15 comprise one in five of the provincial population and almost 300,000 children are five years old and under.** Generations ago, the majority of these children would have grown up in a family headed by their legally married parents. While families headed by two married parents are still the most common type of family structure, other variations of family structure are becoming increasingly more common. Approximately 12 per cent of all couple families are step-families where one or both partners bring children into the relationship, and lone parent families also make up a significant portion of families, at 14.5 per cent.



**Table 3.1: Percentage of Alberta Families by Type**

Family Type	Canada	Alberta
Families with children at home	45.6%	46.8%
• Married couples	38.7%	42.0%
• Common-law couples	6.9%	4.8%
Lone-parent families	15.9%	14.4%
• Female lone-parent families	12.7%	11.3%
• Male lone-parent families	3.2%	3.1%
Same sex couples as a percent of all couples	0.6%	0.4%
Families without children at home	38.4%	38.9%
Married couples	29.9%	30.9%
Common-law couples	8.5%	8.0%

**Source:** Vanier Institute of the Family, 2010. Families Count: Profiling Canada's Families. Author: Ottawa, ON

## Our families are smaller and more diverse

Whatever the family structure, today more Albertans are generally waiting longer to become parents and when they do, they are having fewer children. As well as becoming smaller, Alberta families are also becoming more diverse. In 2006 over 16 per cent of Alberta's population was born in another country and visible minorities made up almost 14 per cent of our population. This has made Alberta the third most culturally diverse province in the country after British Columbia and Ontario. The trend is transforming neighbourhoods, schools and workplaces especially in Alberta's largest cities.



Marriages between individuals from visible minority groups and non-minority groups are also rising, changing traditional family life in many ways. Alberta's population has also been bolstered in recent years by the influx of young families coming from other parts of the country seeking to take advantage of our province's strong economy.

Alberta's Aboriginal population is also changing the family dynamic in the province, being younger and growing at a faster rate than the general population overall. According to the 2006 census approximately six per cent of Alberta's population identified themselves as being Aboriginal, an increase of 20 per cent over 2001. Most of this growth is driven by higher birth rates resulting in a much younger population than the rest of Alberta – the median age being 27 years. This trend also holds true for Alberta's immigrant populations, where the median age is just over 27 years.

## Working parents

### **Thirty years ago less than half of married women with children worked outside the home.**

Today over 70 per cent of children under six years of age live in families where both parents, or the primary caregiver in the case of a lone parent family, work away from the home. The fact is, the majority of today's children under five years of age are the first to spend a significant portion of their young lives in some form of care that is provided by someone other than their parent. This change has a significant impact on how families carry out responsibilities inside the home, and on their needs for resources and supports outside the home.

*Despite the increasing role of external caregivers in young children's lives, families remain the primary source of their children's experiences in their early years.*

Not only do family members have the most contact with young children, they also guide the experiences children have with the world outside the home. Young children depend, first, on their families to provide the right experiences at the right time that will contribute to healthy development. Ultimately children's experience of family will guide the way they parent their own children.



## Parents' knowledge of childhood development

Parents' knowledge of childhood development shapes their expectations and interactions with their children. Positive parenting strategies, based on knowledge of healthy development and timelines for achievement of physical, social and emotional developmental milestones, are associated with better outcomes for children. Given the significant amount of time that young children now spend in the care of other adults, what all adults who interact with children know and understand about healthy childhood development is also very important. A recent survey undertaken to determine what adults in Alberta know about childhood development reported, perhaps not surprisingly, significant gaps in understanding about when children between the ages of birth and five years should achieve physical, cognitive, social and emotional milestones. Also of significance, many respondents reported they were not confident in their parenting skills, nor did they feel supported in their role as a parent.



### Engaging fathers in early childhood development

Alberta families *are* changing but mothers still tend to carry the load in terms of parenting knowledge, confidence and caregiving. Studies show that **father engagement** is strongly linked to improved early childhood experiences, parenting styles and child outcomes. The benefits are impressive: mothers who feel highly supported by their partners show a 70 per cent increase in the likelihood they will demonstrate positive parenting behaviors.

Despite the promise of father engagement, only 44 per cent of dads feel they are supported and encouraged by their partners to take a full role in parenting. In addition, most services available to families with young children are still almost exclusively focused on mothers. We have an opportunity to encourage this most natural – and important – form of parental support.

## Take the challenge – what do we know about key milestones in early childhood development?

A recent study by the Alberta Centre for Child, Family and Community Research (ACCFCR) and the University of Calgary asked adults in Alberta what they know about early childhood development. They found that most of us don't know as much as we think we do! Take this quick quiz to test your own knowledge of key developmental milestones between birth and age five:

By what age can **MOST** children do the following (circle one number):

Milestone	0-6 months	By first birthday	By second birthday	Between 2 and 3	Between 3 and 5
Show affection	A	B	C	D	E
Say simple words	A	B	C	D	E
Begin counting	A	B	C	D	E
Reach for something	A	B	C	D	E
Ask "why?"	A	B	C	D	E
Show concern for others	A	B	C	D	E
Read people's emotions	A	B	C	D	E
Walk	A	B	C	D	E
Share toys	A	B	C	D	E

Based on: *What We Know About Child Development: A Provincial Benchmark Survey*, Alberta Centre for Child, Family and Community Research and the University of Calgary, 2008, and *Growing Miracles*, New Parents Resources, Alberta Health Services.

Answers: C, B, D, A, E, D, B, C, E

Now, add up your right answers. If you got nine right, congratulations! You're probably a public health nurse, pediatrician or a well-informed parent! If you got more wrong than you got right, don't despair. You're in good company. Less than 40 per cent of respondents to the ACCFCR benchmark survey got most of the answers right.

Why does it matter? Parents' knowledge of child development shapes their expectations and interactions with their children. The more they know, the more prepared they are to help their children achieve optimal development. They are also more likely to have realistic expectations and to use appropriate parenting strategies. In other words, good parenting is not about how much you have; it's about how much you know!

## Supporting families

Families bring a wide range of resources to a child's early years including safe and nurturing environments, richness of experiences, exposure to cultural practices and relationships with extended family members. Not surprisingly these resources vary in quantity and quality from family to family. Children in families with more resources tend to have greater opportunities for healthy development, but not always.

Fortunately parenting skills and knowledge of early childhood development are resources that can be developed in most families – regardless of wealth or material goods.

*Although we tend to focus public resources in low-income neighbourhoods and among families that are considered “at risk,” parents who need support in their parenting role are not always associated with low socio-economic status.*

When we limit our focus in this way, we miss many families who struggle with parenting and early childhood development – and we perpetuate the stigma of parents asking for help. Moreover, we are overlooking the value of reinforcing positive parenting skills in all families and inviting all parents, regardless of income, to build networks of mutual support.



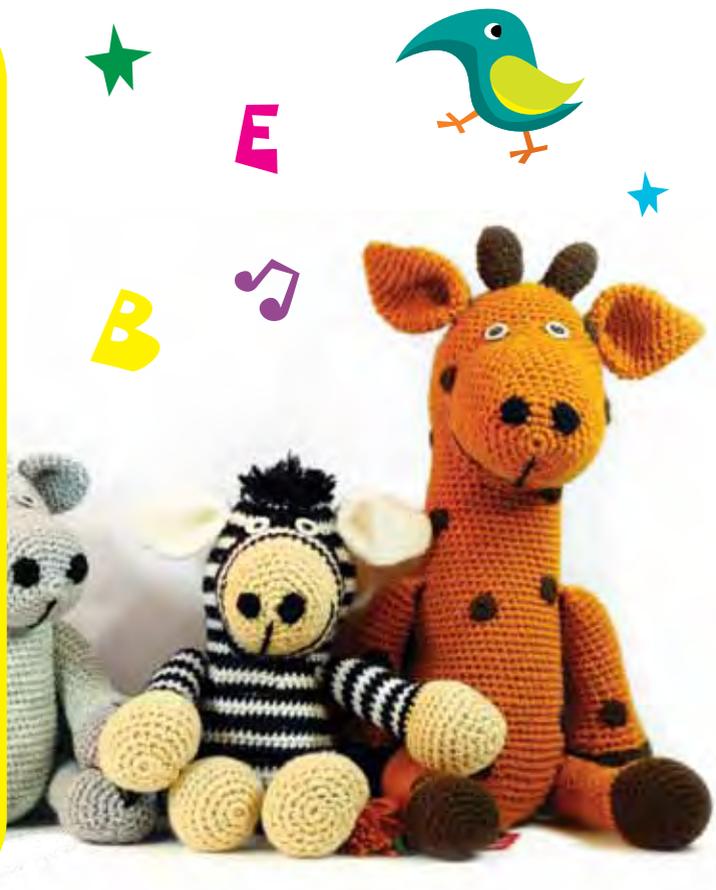
## Let's Talk!

**No doubt the lives of Alberta families with young children are very different today from those of even the recent past.** These changes take on an added significance in light of the rapidly developing field of brain development and the knowledge that positive, stable relationships and nurturing environments during a child's early years provide the basis for a lifetime of healthy development.

Family structure has changed in that immediate family members, who once would have 'mentored' and supported a new mother or father may not be there, and communities may no longer be available to play the same role in fostering positive parenting and providing experiences that support healthy early childhood development.

The increasing reliance on two incomes for financial security, and the increase in the number of lone parents with young children, means that parents must increasingly access external resources to assist them in supporting their child's development and care. While parents express a preference for care provided by a partner or family member, this is not always possible. Most families must access care from external care providers. What this means is, high quality, accessible and affordable opportunities for early childhood learning and care is more important than it has ever been before.

The recent Benchmark Survey conducted by the Alberta Centre for Child, Family and Community Research brings more clarity to what parents value in this support.



***In general, families say they need flexible and affordable programs and services that provide them with choice.***

In order to achieve this, Alberta families support public funding for non-parental early childhood learning and care; they also believe that non-parental providers should be highly trained, and in fact that they are as important as kindergarten and elementary school teachers in supporting the physical, cognitive, social, and emotional development of their young children.

As the Muttart Foundation has so clearly articulated in its review of early childhood development and care in Alberta, the reality is that families' access to early learning and care varies by the age of their children, their household income and, in some cases, by where they live. In short, publicly supported services for children under five are not always accessible to the families that need them the most, leaving many parents with difficult choices in how best to support their children in settings outside the home.

*(The Muttart Foundation discussion paper, "In the Best Interests of Children and Families: A Discussion of Early Childhood Education and Care in Alberta," may be found at [www.muttart.org](http://www.muttart.org)).*



"We have to surround children with the best environments and the best tools available. We know that early learning intervention helps to build a strong foundation in communication and social skills, literacy and numeracy, positive behaviors, and interdependence. Our kids deserve the best we can possible do for them. When kids and families are given that hand up, not a hand out, they can be successful. It's a solid investment."

*Sandra Woitas, Executive Director,  
Edmonton Public Schools Foundation*



# chapter: 4

**It Takes a Village to Raise a Child.  
It Really Does!**





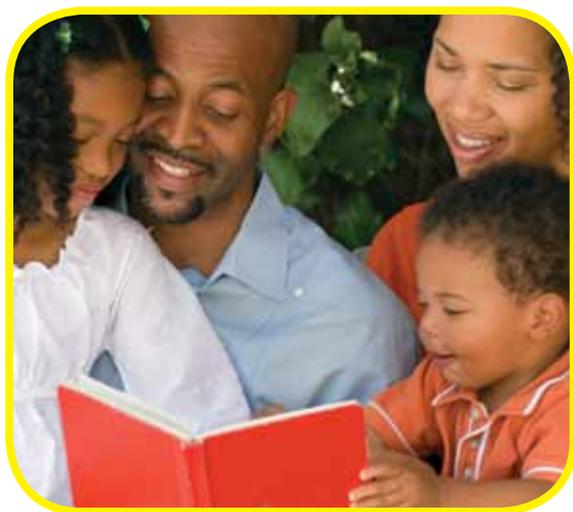


# Chapter 4 – It Takes a Village to Raise a Child. It Really Does!



Most of us are familiar with the saying, “it takes a village to raise a child,” but perhaps few people stop to think about what it really means.

**This saying is usually traced to African folk wisdom – and indeed, there is a good deal of wisdom here.** As Albertans we accept our shared responsibility for educating children, helping families in crisis, preventing illness through universal vaccination programs, and ensuring health care for all. During the first five years of life, however, we often leave most of the “raising” to parents and caregivers. What, if any, role should we – as a child’s village – play in the early years?



### “You can only have two grandmothers...”

In the 1950s, my family lived in a Métis community that was bound together by a shared language – Michis – which gave us a shared culture, a shared experience. There was a nucleus of people who lived within walking distance of where my family lived and I would meet these people all the time, at village functions, social gatherings and family visits. So, we all knew each other. In my village there were three elderly ladies who my mother referred to as *kookums*, or grandmothers. Basically, all the adults of the community were known as aunts and uncles and other children were our cousins. Our language has several different words to distinguish among these relationships.



When I was about six or seven years old a new, non-Métis teacher came to our village. He was a young man just released from the military, I think, and on some kind of assigned job. He was unmarried and my mother did the housecleaning for him. That summer his young niece came to visit and the teacher asked my mother if she could play with me. My mother agreed and told me that a little white girl was coming to play. For me, I had no ideas yet about different ethnicities and culture. I just considered her another little girl, same as me.

She came with the teacher and I grabbed her hand and took her to where I was building a playhouse in the bush. I explained to her about the playhouse and how we would be rummaging around people’s houses to find things to furnish and decorate it. It was early summer so people had stuff out around their places. She looked a little confused by it all and I must say, looking back, that she was a really good sport about it. I don’t imagine she had ever built a play house in the bush before!

Anyway, I told her, “we’re going to my *kookum’s* house to see what we can find.” She asked who that was and I explained it was my grandmother. The first was my *kookum* who lived nearest to where we were playing. We rummaged around for a while, then I said we were going to my other *kookum’s* house, and off we went for a little rummage there. It was getting hot by this time and she told me she was thirsty. I said, “no problem, we’ll go to my *kookum’s* house to get a drink of water from her well.” I took her hand and started running in what was a new direction. She protested that we were going the wrong way and asked, “where are we going?” I said, “to my *kookum’s*.” She argued, “your grandmother’s house is over there,” pointing to the first house we had visited. I simply responded, “we’re going to my other *kookum’s* house, she has a water well.”

“But we have already been to your grandmothers’ houses,” she said. “You can only have two grandmothers, one is your father’s mother and the other is your mother’s mother.” I told her that none of my three *kookums* were either my father’s mother or my mother’s mother.

When I described the day to my mother, she told me that not everybody believes as we do and that in our culture, everyone of a certain age ... well, we just call our *kookum*.

*Irena Collins, Chief Administrative Officer, Métis Nation of Alberta*

## Community... the family's family

**At the most basic level, communities are groups of people who put trust in one another, willingly help one another and connect with others for a common purpose.** Communities can take many forms, from traditional neighbourhoods where people live, to those made up of people with whom the family shares a common identity such as a cultural group, faith community or workplace. Through social media we also see the emergence of virtual communities that link parents and families beyond traditional boundaries. In many ways, the connection between a family and its community is like the connection between a young child and her family. When the relationship is strong the community surrounds, supports and nurtures its families, providing the positive experiences and environments they need to grow, develop and thrive. When the relationship is weak, families can struggle.

Parents of young children begin searching for community when their first child is born. In most cases, a family's first community is formed by its own extended family and friends. But the community to which most new parents next reach out to is the neighborhood and surrounding area in which they live. Their new status as "families with young children" shapes their changing need for "community" to one that offers a network of support for their new role as parents. The richness of this network of support can be a strong influence, helping to strengthen families and fostering positive outcomes for both children and parents.



"It can be hard to get to know people when you have small kids. We're lucky to live in a very, very family friendly neighbourhood with lots of young families. Once you get to know people, it's great. You can share ideas and advice and spend time with people who are in a similar life situation as you. And we help each other out with our kids. For example, I can leave my kids with the neighbour for a couple of hours and run errands. My neighbourhood also has a good park and summer and winter activities, like a sledding hill. There's always someone there whose kids play with yours and you and the parents can visit."

*Bridgitte, stay-at-home parent*



*“How can communities support healthy early childhood development?” There is no easy or obvious answer to this question. Stable income and secure housing is an essential first step, but alone they are not enough to provide the right conditions for healthy development. What we know about the science of early childhood development tells us that young children, in addition to proper nutrition, opportunities for physical activity, clothing and shelter, also need to be surrounded by quality caregiving, positive “serve and return” experiences and “non-toxic” environments. The community is where most families will look to meet these needs.*

## Building Social Support Networks ... bringing neighbors together

**Parenting success is strongly linked to informal, community-based supports and the availability of quality parenting resources and programs.** When families with young children have a network of formal and informal supports in their community they are more likely to do better. That’s because they are more likely to use the programs and services available in their community to help them develop skills, knowledge and confidence in their role as parents. Community can also help parents of young children overcome feelings of isolation by connecting them to other parents and people with whom they share common interests.

*Parents say they want programs that are less paternalistic (“we know what’s best for you”), more flexible, and driven (or at least shaped) by their own ideas and interests.*

Centralized and standardized programs, even high quality programs, can be a poor fit with local needs. Instead, looking for opportunities in our formal programs and services, ones that we know work, and adapting them to meet changing needs, interests and cultural backgrounds will be more helpful to parents.



Neighbourhood associations, community leagues, community networks and other locally organized groups can provide new parents with their first connection to their neighbours. These groups often provide informal services and supports that new parents need, such as parenting information, social events and links to other community services. Although many neighbourhood groups are not licensed or equipped to deliver more formal services, they provide an opportunity for local decision-making and family involvement.

**This potential could be developed further, by encouraging community groups to think more seriously about the early childhood period and what they can do to have a positive impact on the families of young children.**



### Building informal supports in formal systems

*Formal* services and supports can offer a number of opportunities to help parents of young children build their own *informal* support networks. Here are some suggestions:

- Purposefully create time to socialize before and/or after programs
- Use small teams or pairs for group discussions
- Develop a phone or email buddy system
- Host fun events designed to build relationships between and among parents
- Provide programs when moms and dads are available
- Link parents who live near one another, perhaps to simply share a ride

### Making fitness a family affair!

Fitness programs for parents and children are a great way for parents of young children to connect with other parents in their community – while encouraging healthy, active lifestyles for the whole family. Most family fitness centres in Alberta offer some type of parent-child program. For example, the YMCAs in Edmonton offer stroller aerobics and aqua-cise for parents with babies under 18 months old. Babies come along for the ride in a stroller or baby-boat while mom and dad work out, then they get some quality face-to-face time during the cool down. Another example is toddler yoga for three to five year olds, with poses that children can do with their parents. Programs like these not only make it easier for parents with young children to get active, they provide a unique opportunity for young families to connect with other families in their community.

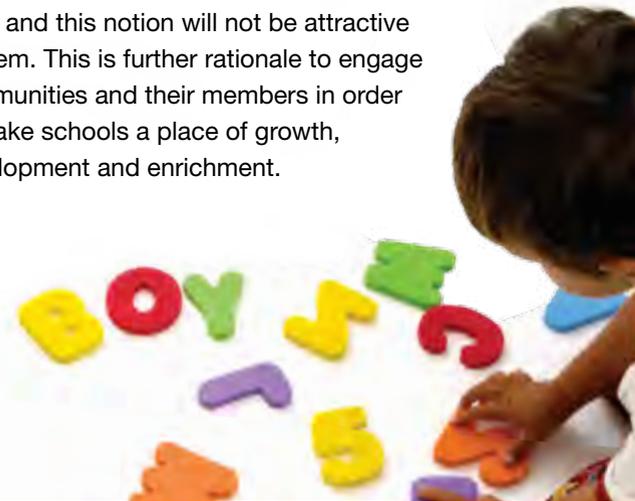
### Schools as “community hubs”

**Parents of young children more and more see local schools as the best place to provide a wide range of services and supports – well beyond simple parenting programs.** Many say they would like to see their local school offer a range of programs including adult literacy, early childhood development, childcare, before and after school programs, family counseling and even employment services. In other words, parents want their local school to be a “hub” for their community. In response, we need to change the way we think about schools and what they can offer to our communities. By expanding the reach of our schools more broadly, including to families with young children, we acknowledge that our responsibility as a community begins long before children reach school age.

*The “school as community hub” is not a new concept. Many community-focused schools exist across the province and offer a range of programs that support parenting and early childhood development.*

With few exceptions, though, most of these community hubs depend on the interest of the school principal and uncertain funding from a variety of local sources. **In Alberta, we have an opportunity to build community into local schools by making it part of the standard design for new schools and renovating existing schools to support family friendly programs and services. Long before they reach school-age, children and their families could find community in their local schools.**

Having made the argument for building “schools as community hubs”, it is important to respect that some Albertans have had negative associations with schools in their past, and this notion will not be attractive to them. This is further rationale to engage communities and their members in order to make schools a place of growth, development and enrichment.



“I’ve waited 20 years to have a facility like this built right into the school ... and there is so much we have been able to do with it. In fact, it’s pretty much full of programming for kids and families already. We have made the school accessible for preschoolers, parents and grandparents from the neighbourhood from lots of different cultures ... and best of all we can run groups that fit what the community wants.”

*School Principal*



## “Building” community

**A family’s experience of neighbourhood is influenced both by the people who live there and the “built” environment that surrounds them.** How a community is designed can offer many opportunities to draw people out of their houses and into relationships with their neighbours – and not just through community centres. Sidewalks and walking trails, playgrounds and parks, front porches and back lane garages are just some of the ways that neighbourhood design can bring families with young children together.

This is an opportunity for developers to design and *build* communities that build community. The good news is that some developers and community housing cooperatives are already incorporating educational facilities, shared community resources, and facilities and spaces for parents and young children into their development design. These features support parents with children of all ages and encourage social contact among neighbours.

It is important that healthy early childhood development becomes part of the conversation when we talk about zoning and long-term planning. We also need to involve people with the right expertise, such as play-based learning and early childhood development when we design community facilities. Strategies that start with, and build on, the natural interests and behaviors of parents create opportunities for more informal support and a greater sense of local community. Things like “parent pits” in local parks and parent drop-in rooms in community facilities are two simple ways that families can come together naturally and find mutual support. Most importantly, we need to ask families what they need to help build social connections in their neighbourhoods.

## Building early childhood development into neighborhoods

Here are some ways that community design can make it easier for families to connect with their neighbours and provide a positive environment for their young children:

- Sidewalks in every suburban and rural community
- Smaller local parks with age appropriate equipment
- “Community” space incorporated into school design
- Quality playground equipment for schools
- Land reserved in subdivisions to support the creation of child care and ECD centres
- Constructing houses (and streets) not fronted by the garage
- Front porches on homes

## Building Social Support Networks ... reaching beyond the neighborhood

### Cultural and ethnic communities

**Alberta’s diverse cultural and ethnic communities provide an important social support network to their members, including families with young children.** While approaches to supporting families vary, many have developed their own community-based resources that offer cultural and language appropriate services. Engaging and supporting these communities in promoting early childhood development has to involve more than translating brochures into different languages or re-locating mainstream programs to an ethnic or cultural centre. Each cultural and ethnic community needs the opportunity to discuss and to understand the science of early childhood development within the context of their own cultural practices. The goal should be to start from a shared understanding about healthy childhood development, and the outcome should be a greater sense of control and ownership by the community for programs and resources available to their families.

“The moms loved the parenting video, mainly because it was so out of date and the clothes looked funny ... and as young aboriginal women it didn’t look much like their world. But because they liked most of the content they decided to re-shoot the video with themselves in it and made some adjustments so it reflected their own community. They had a blast doing it, we ended up with a great resource, and they learned so much that it was well worthwhile.”

*ECD Researcher*



### Creating a culture of support

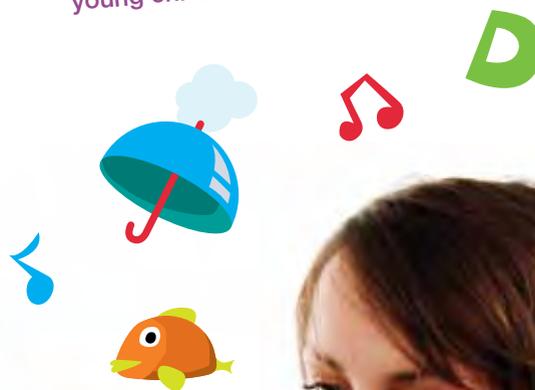
Here are some ways Alberta's cultural and ethnic communities can support their parents and promote healthy early childhood development:

- Remake proven “mainstream” training tools and videos to reflect their own cultural and family practices
- Create social drop-in groups and support networks for parents (mothers and fathers)
- Invite professionals to talk with parents about their issues and concerns
- Educate and train play group leaders and facilitators who share the culture and language of the community
- Host community celebrations for parents, children and families
- Provide fun field trips for parents with young children to link them to the broader community
- Link families to resources and supports within and outside their community
- Develop a list of best practices and examples that can help communities develop effective strategies

### Workplace Communities

As discussed in the previous chapter, most young children live in families where both parents work outside the home. This means the workplace has become an important community for families with young children. Many employers in Alberta have adopted family friendly policies, for example offering a flexible work week, but few of these policies are directed specifically at parents of young children. There is a real opportunity for employers to support early childhood development by supporting parents, particularly those with younger children, in their places of work.

Peer leadership from the business community, or a coordinating organization like Alberta's Promise, could help set the direction. A “tool kit” for employers could make the social and economic case for good parenting and healthy childhood development and suggest concrete ways that employers can support parents and young children.





### Supporting parents in the workplace

Here are some business practices and policies that employers could adopt to support parents and promote early childhood development:

- Flexible hours
- Parental release time
- Part-time return to work strategies
- On-site child care
- Lactation rooms for breastfeeding mothers
- Encouraging fathers to use existing paternal leave benefits
- Parent mentors
- Social opportunities for parents with young children

### Religious and faith-based communities

**Religious and faith-based communities provide a spiritual, social and personal sense of connectedness not always found in other forms of community.** For some families, this connection is central to family life and the guiding influence in how they parent young children. For others, it is one of several communities in their social network, with varying levels of importance. In either case, religious and faith-based communities have an important role to play in the healthy and holistic development of young children.

*Religious and faith-based communities help parents introduce a dimension of human development that goes beyond brain and body, by providing a starting point for moral development in their young children. Religious and cultural practices are also closely linked in some ethnic communities. In these communities, spiritual development is often integrated with other forms of cultural learning.*



On a practical level, religious and faith-based communities can play an active role in supporting families with young children. Simple strategies like providing child care before, during and after services or events can give parents an opportunity to connect with other parents. Faith communities can also offer formal programs or informal discussions that link parents with children of similar ages and stages of development. Other practical supports include providing parenting information, allowing community groups to use their facilities and providing meaningful opportunities for families to volunteer in the broader community.



## Virtual communities

Although there is no evidence, either positive or negative, on the impact of social media on parenting success and early childhood development, many parents use the Internet to create virtual communities. The technology and culture of social media meets parents' need for flexible, accessible, optional engagement and "guilt free" peer to peer support. Social media offers the opportunity to create online communities that link parents who live in the same area, helping them form "real" social networks and relationships with other families.

There is the opportunity also to use electronic media to improve the quality of information and supports available to families. For example, the "fundamentals" of early childhood development could be offered online as a public service. Such a program could have increasing levels of certification that recognize increasing skills and knowledge. Non-licensed childcare providers and the thousands of nannies working in Alberta, even parents and other caregivers, would have an opportunity to become "certified" caregivers. The new "Raising Children" website ([www.raisingchildren.alberta.ca](http://www.raisingchildren.alberta.ca)) is an example of a "virtual" resource now available to help parents and caregivers of newborns and children up to age six make informed decisions related to early childhood development.



## Barriers to creating community...

“I got so tired of hearing people say ‘there’s nothing in this community, no resources,’ so I hired some summer students to do a complete inventory of what was there – every chair, fridge, gym and space in their neighbourhoods. And guess what? Each of them had a binder full of different community resources. The problem was they were each owned and operated by separate groups who were very protective of their facility and their stuff. They really didn’t see it as a ‘community’ resource.”

*Director, family support agency*

### Linking systems

Parents with young children are served by many, many public systems. Some of these include public health and health care, education and early learning, provincial services for children and youth, municipal services for families and communities, and community recreation services. Despite a shared interest in families, most of these systems work independently of each other.

*Here in Alberta, we have the opportunity to consider a more strategic approach to how we fund and deliver services for young children and their families. There are examples from other provinces who are taking steps in this direction – toward a more consolidated system of community early learning and care services.*



### Knowing how we’re doing... “mapping” the way

It is more than clear – communities play a critical role in influencing early childhood development and children who grow up in strong, cohesive communities with a range of quality supports and services tend to do better in the early years and throughout their lives. How can communities – that is, you and I – make sure we are providing the right supports and services for our young children and families? First, we need to know where these supports and services are, and then we can determine what else we need.

The Early Child Development Mapping Initiative funded by Alberta Education in collaboration with the ministries of Children and Youth Services and Health and Wellness, offers a compelling opportunity to do just that.

The Early Child Development Mapping (ECMap) project team uses three sources of information. The first source is the Early Development Instrument, or EDI. The EDI offers a holistic measure of children's development across five areas – physical health and well-being, social competence, emotional maturity, language development, thinking and communication skills. The EDI, used in many Canadian provinces and 14 countries around the world, is rapidly emerging as the world standard for understanding early childhood development across populations. In 2009 and 2010, school authorities in Alberta collected information on more than 30,000 kindergarten children. Information on an additional 15,000 children is being collected in the spring of 2011 and will provide data for the whole province.

The second source of information is provided by Statistics Canada. It includes socioeconomic factors from census data, such as household income and family type. A final and essential source of information is the communities themselves. All this information is plotted on maps and detailed in reports for each community and for the province as a whole. The maps highlight both the strengths and gaps in a community's programs, facilities and services for children and families.

For more information on the Early Child Development Mapping Project (ECMap), please call 780-248-1574 or send an e-mail to [ecmap@extn.ualberta.ca](mailto:ecmap@extn.ualberta.ca) or to go the website at [www.ecdmapping.alberta.ca](http://www.ecdmapping.alberta.ca)



## Rethinking the EDI in First Nations communities

The Yellowhead Tribal College (which represents the Alexander First Nation, Alexis Nakota Sioux Nation, Enoch Cree Nation, O'Chiese First Nation and Sunchild First Nation) and University of Alberta researchers are looking at ways to use the EDI instrument effectively with aboriginal communities. "EDI data is often incomplete as it reflects a western approach. It misses important aspects that are important to us – culture, language and spirituality," says Dr. Rebecca Gokiert, assistant director of the Community-University Partnership at the University of Alberta's Faculty of Extension. "Our communities want to see our values and beliefs honoured, and to have a say in how information is interpreted and shared." Tracey Poitras-Collins, Yellowhead Tribal College

## Let's Talk!

**From the earliest days of life, young children begin to interact with their communities.**

Whatever the kind of community, each has the potential to provide new experiences and opportunities that help children learn, grow and develop. Indeed, it does take a village to raise a child! All of us have a role to play – as members of a child's village – in promoting early childhood development. Families should continue to ask, "How can we get involved in our community?" More importantly, though, we all need to ask, "How can communities get involved in their families?"

### If you're a parent,

- What sources of support do you turn to? How could your support network be strengthened?
- Do you believe one type of support is more important than another?
- Why do you think some parents go it alone and don't seek support from others?
- How could your community overcome barriers so that more parents seek support?



**If you're a parent, or if you're not,**

- How do you support the parents you know?  
What could you do to be even more supportive?

Alberta families, whether they live in large urban centres or small towns and rural communities, are served by a wide range of agencies with different mandates. Unfortunately, despite a common focus, most of these providers work independently. While services for parents and families need to be accessible, convenient and responsive to individual and local needs, there is also a need to link these services better. We could begin with a strategic rethinking about how we fund and deliver public programs and services for children and their families.



# chapter: 5

**Measuring What We Value,  
and Valuing What We Measure**







# Chapter 5 – Measuring What We Value, and Valuing What We Measure



In order to be sure we're making the right investments in early childhood development we need good information and meaningful knowledge which come from high quality data.

**The data we collect has to be directly related to the outcomes we want to achieve.** This means identifying the factors – individual, family, community and societal – that can create those outcomes. These might include both immediate factors, such as maternal mental health, as well as broader factors, such as the percentage of families living in poverty or high school drop out rates. The combination provides us with the big picture and makes the connection between what *is* and what *should be*.

What the science tells us is that investing in early childhood isn't just a hunch any more, it's crucial. The right measures can point to actions that will have the greatest impact, that is, to the investments that will give the greatest return. For example, if we combine infant birth weight data with community data such as neighbourhood resources, household income or family type, we can draw a picture about how birth outcomes vary across a community or across the province.

*We can then use this information to target interventions appropriately to improve these birth outcomes. This investment will, in turn, pay off in the long term by reducing future health problems and associated costs.*



## How we measure... from data to information to knowledge

**Measurement produces data. From data we get information and from information we get knowledge.** Information is what the data says and knowledge is what the information *means*. It is important to understand and test the information in order to make it reliable knowledge that can support the development of policies and programs we need.

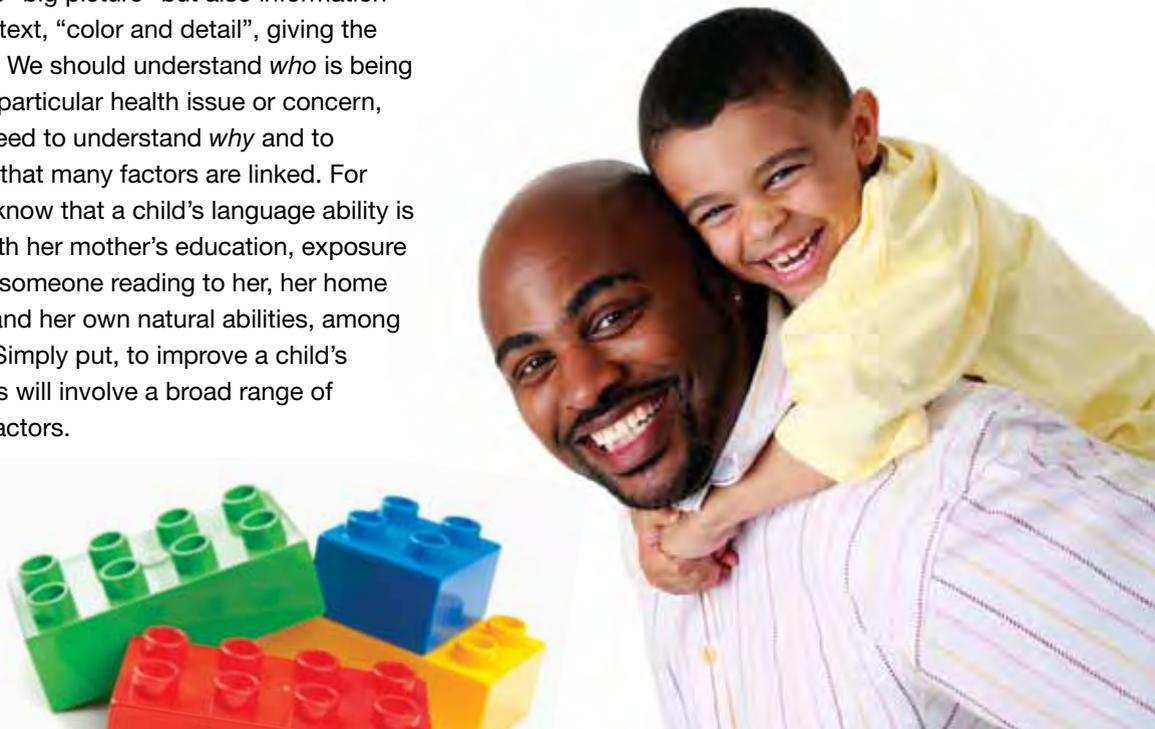
To ensure high quality data we need to create a culture in Alberta that makes it easy to collect and link data about individuals, families and communities, while at the same time preserving privacy. A high quality data collection system will have the right tools, used at the right time and appropriate level – individual, family, community or societal – to provide information that will have the greatest impact. Good investments are based on good information.

It is important to have information that allows us to paint the “big picture” but also information that adds context, “color and detail”, giving the picture depth. We should understand *who* is being affected by a particular health issue or concern, but we also need to understand *why* and to acknowledge that many factors are linked. For example, we know that a child’s language ability is associated with her mother’s education, exposure to books and someone reading to her, her home environment and her own natural abilities, among other things. Simply put, to improve a child’s language skills will involve a broad range of inter-related factors.

## When we measure... beyond school readiness

That a child is physically, mentally and socially ready for school is extremely important, and we all know why. The work being undertaken in Alberta to establish a baseline of our children’s developmental readiness for Kindergarten, using the EDI measurement tool, is particularly important in building our understanding about exactly how our young children are doing. It will offer us a measurement – a marker – not just about our children’s readiness for school, but about what has, or has not, come before.

Measuring “beyond school readiness” means that we consider the whole child in the context of her broader environment and that we measure her *life readiness*. It points to the importance of collecting data about the child’s earliest environments, before birth and even before pregnancy. The more we know about these very, very early experiences and the experiences after that, the better prepared we will be to identify, and hopefully mitigate, risks for healthy childhood development – if not life-long development.



## What we measure... and what we don't

### Deciding to become parents

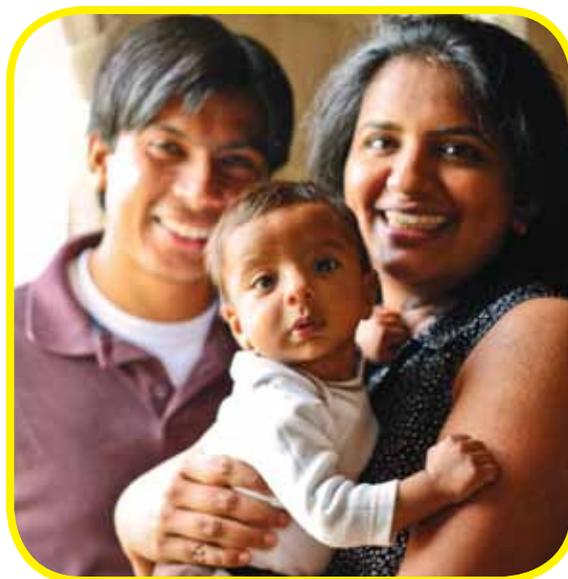
**Most mothers say they plan their pregnancies. We also know the vast majority of young people, as many as 95 per cent, plan to have at least one child.** In other words, most people make an active and purposeful decision to become parents. Over the last 30 years, however, the age at which women begin having children has increased dramatically. In Alberta, the average age at which a woman has her first child has increased from 27 years in 1986 to 29.3 years in 2006.



What does all this have to do with early childhood development? More than you think! As more women delay childbearing we tend to see poorer birth outcomes. For example, women who delay childbearing until they are 35 years or older are at increased risk for low birth weight babies, preterm delivery, multiple births (twins or triplets), cesarean delivery, as well as stillbirth and unexplained fetal death. Delayed childbearing explained 78 per cent of the increase in low birth weight babies and 36 per cent of preterm deliveries in Alberta between 1990 and 1996, and the rate of delayed childbearing continues to increase.

*The sobering reality is, a child who is born too small, or too soon, is at increased risk for poor health and life-long physical or developmental disabilities.*

Not only do these outcomes negatively affect the life of the child, they have a significant long-term impact on families, communities and Alberta overall. Despite the risks associated with choosing to delay childbearing, there is generally poor understanding about these risks.





## Healthy pregnancies

**A healthy pregnancy has a significant impact on a child's life-long well-being.** Ensuring a healthy pregnancy begins *before* a woman becomes pregnant with routine care that helps her understand the implications of delayed childbearing, the importance of proper nutrition and avoidance of alcohol, among other things. Women at risk for poor mental health after the birth of their children can be identified during pregnancy. Yet we know that few health care providers talk about, or screen for, mental health with their female patients of childbearing age. Interestingly, a recent study found that fewer than 37 per cent of women in their childbearing years had discussed preparing for pregnancy with their family doctor. This compares to 85 per cent who said they routinely talk about ways to *prevent* pregnancy (that is, birth control).



Low birth weight includes babies born preterm and babies born small for their gestational age. Both are associated with a number of health and developmental problems that can follow a child into adulthood. Learning difficulties are associated in particular with preterm birth. Small for gestational age babies have an increased risk of diabetes and hypertension as adults. Alberta has one of the highest preterm birth rates in Canada – 8.4 per cent of births in Alberta are preterm compared to the Canadian average of 7.8 per cent. The economic costs of preterm births are substantial. In Alberta, the combined costs of health care, education and lost productivity are at least \$106 million per year, in Canada as a whole they are over \$1.6 billion.

***There are other factors that challenge a healthy pregnancy and can contribute to poor birth outcomes for Alberta children. They include mothers who are victims of domestic violence, live in poverty, lack social support, experience language barriers and have limited education.***

Many of these women receive little or no prenatal care which is another risk factor in itself. The more we know about *who* is at risk for poor birth outcomes the better able we will be to provide support earlier, with more assurance of a healthy pregnancy and a healthy baby with a better chance for life-long success.

A particular challenge is to find ways to get sensitive information from women before and during pregnancy. Current information systems rarely capture the use of alcohol and drugs during pregnancy for a host of reasons – challenges with routine recording on medical charts, possible bias when asking questions about substance use, the stigma of admitting use of these substances – to name a few. Efforts are currently underway to improve the quality of routinely collected surveillance data by improving the ways we collect such sensitive information. On the positive side, improved collection of sensitive data can provide a more complete picture about factors that contribute to poor birth outcomes and impact healthy childhood development as well.



### Why does Mary drink too much?

Because she is with her friends and feels relief when she drinks.

#### *But why does she need relief?*

Because all she is qualified for is a low paying job after she ran away from her third foster home. In the job she has, people treat her poorly and drinking makes her feel less lonely.

#### *But why was she in foster care?*

Because her dad abused her and her mother wasn't able to take care of her.

#### *But why did her dad abuse her?*

Because when he drank too much, he became aggressive.

#### *But why did he drink so much?*

Because he was unemployed and couldn't provide for his family, and was seeking relief from the grief in his life.

#### *But why was he unemployed?*

Because he didn't have much education and couldn't find a job.

#### *But why didn't he have much education?*

Because he ran away from home when he was 14 and never finished school.

#### *But why did he run away from home?*

Because his father hit him and his mom was depressed.

#### *But why did his father hit him and why was his mom depressed?*

Because they drank too much.

*(Start over from the top.)*

Mary's story suggests the solutions to drinking during pregnancy are more complicated than we might think. Women who drink during pregnancy very often have a tragic history and drinking may be a way they have learned to cope with the difficult circumstances in their lives. This cycle could be further complicated if Mary herself was exposed to alcohol before birth, compromising her decision making ability, her ability to handle finances and her ability to manage her life overall.

*Based on a Health Canada poem about the social determinants of health.*



## Home environment in the early years

**The significance of the home environment in the early years has been clearly established.**

Children who grow up in nurturing homes with ample opportunities to bond with their important adults, and who are able to safely explore their world, do better than children who don't. When children live in home environments that threaten their safety and well-being and it is determined they cannot continue to live with their families, foster care, kinship care or adoption might provide more stability and greater opportunities for healthy development.

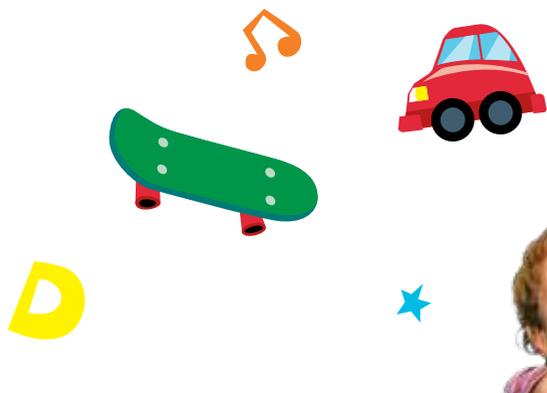
*Unfortunately, we do not yet have enough solid evidence to show how foster care, kinship care or other out-of-home placement strategies affect child development or long-term outcomes for these children. This is certainly an area for which additional monitoring and further research is warranted.*

Being able to identify vulnerable children and their families early so that we can take actions to reduce risk and put them on a healthier life path is important. Being able to track and monitor indicators, such as the number of children who are being apprehended from their families and how they do after that, will help us to measure our progress and the success of our interventions.

## Transition to parenting

**As we know, the proportion of women with preschool aged children who return to the paid workforce has increased significantly over the past 30 years.** This is a significant shift that has impacted access to high quality programs and care, important because such programs help to ensure children continue to have the experiences they need for optimum development. Access to quality programs is of the highest importance, but do we know what makes a program, a *quality* program? Research to identify promising practices in conjunction with identification of gaps in services, would guide a more strategic approach to professional early learning and care in the province. As importantly, we would have more understanding about what *quality* actually looks like.

Beyond the number and the kind of programs available in the province, an important indicator should be the kind of programs parents say they need, and how many parents are waiting to access them. Baseline information like that provided by the *Alberta Benchmark Survey: What Adults Know About Child Development* will be important on an on-going basis, allowing us to track changes in public knowledge and understanding about early childhood development, as well as how we're doing overall in providing the programs and services parents say they need.



## Measuring *life readiness*

**Individual measures such as our children's overall health and school readiness are an essential part of the "life readiness" story.**

We are very good at collecting information and reporting on our children's health overall, but this information tends to be more "illness oriented" for example, measures of asthma rates, hospitalizations and emergency room use. While this is important to know, other important information includes how much exercise, sleep and healthy food our children are getting; how little time they spend in front of a computer or TV screen; and how they are developing mentally, physically and socially. These are key indicators for healthy early childhood development and they are critical to our knowledge about how our young children are doing overall.

More broadly, we also need to measure how communities are able to support families with young children. Understanding where families live – apartments, condos or houses; proximity to playgrounds and parks; access to grocery stores where healthy foods are available as the healthiest choices; the cohesiveness of the community and how connected families feel they are to their community. We don't measure these factors very well, and yet, they are key to healthy early childhood development.



Most infants in Alberta are breastfeeding when they leave hospital, yet just over 16 per cent are exclusively breastfeeding at six months (as recommended). Breastfed babies are healthier babies and the benefits of breastfeeding are abundant and well-documented. Children who were breastfed as babies experience a reduced risk of obesity, asthma, certain childhood cancers, and diabetes. In addition, breastfeeding offers an intimate opportunity for mother and infant bonding.



As infants reach the two-month milestone, parents are invited to begin one of the most important actions they can take to promote life-long health – immunization. The Alberta Routine Immunization Schedule starts in infancy and continues throughout the early years, school years and into adulthood. In Alberta, our goal is to immunize at least 97 per cent of children by the age of two. In reality, we're getting closer but the actual uptake still falls a little short of this goal. In 2008 for example, 84 per cent of two year olds had received the recommended vaccinations for diphtheria, tetanus, pertussis (whooping cough) and polio, and just over 89 per cent had received their first vaccination against measles, mumps and rubella (the MMR, as it's called, is boosted before children start school).

## A Framework For predicting child health and well-being

There are gaps in our knowledge about early childhood development but there are also opportunities to fill those gaps. To take advantage of these opportunities, we need a framework that helps us to link the various pieces of surveillance and routine data collection, pointing us toward meaningful measures (or indicators) of healthy child development and well-being.

The Framework for Predicting Child Health and Well-being, developed by Dr. Wayne Majic and Dr. Bonnie Leadbeater, presents key concepts in early child development and provides a way of looking at how they relate to each other and how they change over time. (A slightly modified version of this framework is presented in Figure 5-1). This framework provides a useful tool for selecting indicators, deciding where, when and how to take action, and measuring the impact of these investments over time. It also can help us identify opportunities to integrate the data we collect in Alberta to provide information that will increase our knowledge about early childhood development. In addition, because this framework reflects the priority areas used by many countries to monitor child health and well-being, it will help us identify promising practices and compare our outcomes with other provinces and countries.



**Figure 5-1: Making the Connection – Early Childhood Development and the Environments in which Children Develop**

Dimensions of Child Development	Environments					
Social relationships	Individual Factors Infant Preschooler	Family & Friends Extended family Peers	Schools Daycare Early Learning School as community hub	Community <i>Neighbors</i> Workplace Business Services Shared interests Faith	Society and Culture Provincial & National Institutions Governments Culture & Ethnicity	Physical & Built Environment Playgrounds Grocery stores & markets Green space
Language and thinking skills						
Economic and material well-being						
Physical health						
Mental/emotional health						

### Selecting indicators of child health and well-being

Majic and Leadbeater propose criteria for selecting appropriate indicators to measure child health and well-being. These criteria are based on common themes identified by leaders in the field of child development. Based on their understanding of these themes, the researchers suggest that indicators must be:

- significant to the well-being of children
- relevant to policy
- easily understood by multiple stakeholders
- capable of producing estimates for key subgroups
- consistent in interpretation and comparability



## Let's Talk!

*Once again, in order to be sure we're making the right investments in early childhood development we need good information and meaningful knowledge which come from high quality data.*

The data we collect has to be directly related to the outcomes we want to achieve. This means identifying the factors – individual, family, community and societal – that can create those outcomes.

In Alberta, we are good at collecting data. Key databases are maintained by government ministries associated with the well-being of our children, for example, Health and Wellness, Education and Children and Youth Services; we collect data through general administrative databases such as the Alberta Perinatal Health Program; there are data sets that are specific to services and programs; and we also get national data from vital statistics and hospitalization databases. What is needed, however, is to make it easier to share information between the many systems that serve parents and young children. Our new provincial resource, the Child and Youth Data Laboratory brings together data from nine ministries. The analysis of this data will advance our understanding as to how and where to focus resources to optimize the well-being of Alberta's children. This is a good beginning. Next we must establish common *life readiness* indicators across all sectors to measure our progress.



# chapter: 6

**Where Do We Go From Here?**





VIOLETTE



# Chapter 6 – Where Do We Go From Here?



Investment in early childhood is one of the greatest opportunities we have to enhance the health and well-being of all Albertans.

**Not only will it make a difference to individuals and communities, it will position our province for greater economic growth and leadership in a knowledge based society, now and in the future.** As Albertans, we take great pride in ingenuity. We have established an international reputation for innovation in areas as diverse as biomedical research, nanotechnology and industrial processes. We also take pride in our communities and understand that “we’re all in this together!” Imagine if we could harness both our ingenuity and our community spirit to drive a whole new commitment to early childhood development in Alberta.

Recognition of the early childhood years is growing in Alberta. The Premier’s Council for Economic Strategy, for one, has linked the importance of early childhood experiences to economic growth and development. A new Early Learning Branch of Alberta Education is making the connection between school readiness and what happens in the first years of life. The Norlien Foundation’s Early Brain and Biologic Development Symposium is bringing together decision-makers and researchers to find ways to improve outcomes for young children. The Early Childhood Development Mapping Initiative

is highlighting the factors that may be affecting early child development in Alberta. At the same time, the Alberta Centre for Child Family and Community Research is creating new knowledge to support greater investment in this pivotal time of life.



At the community level, we see a growing number of supports for young children and their families. Grassroots organizations are engaging families in building social networks and community-based services to meet local needs. The United Way, Success by 6 Council of Partners, Muttart Foundation and other organizations are focusing resources on the early years, recognizing that healthy children and families are the foundation of strong communities. Provincial organizations like the Alberta Resource Centre for Quality Enhancement; Alberta Home Visitation Network; Canadian Association for Young Children Alberta/NWT; and the Child and Youth Care Association of Alberta, are providing professional development and knowledge transfer opportunities to help early child professionals use best and promising practices for early childhood development.

*Through a range of provincial government programs and services, we continue to assist families with young children by providing prenatal care and education, home visits to new mothers, support for children with disabilities, child care standards and subsidies, early learning for preschool aged children and targeted supports for vulnerable families.*

In other words, Albertans' are interested in early childhood development. Our challenge is to make sure we're making the right investments to get the highest returns. Our opportunity is to use our growing understanding about the science of early childhood development to guide our re-thinking about when and how we make these investments. In this chapter, we invite you to turn talk into action, by asking the question:

***“What can we do – as individuals, families, communities and a province – to help our children be the best they can be?”***



## What makes an investment the right investment?

To make the *right* investments in early childhood development, we need to do the right things and we need to do them *right*. That means building on those things that we know are effective. Given what we know about the process of early childhood development – from both the recent science and decades of evaluation research – we can now point with confidence to those factors that positively influence development in our children’s earliest years. The following “effectiveness factors” come from a rich body of evidence and can be used to guide the policies and practices that support the early development of our province’s children.

- **Get the basics right!**

**Good nutrition and regular physical activity are essential to healthy childhood development.** The more we can do to make it easier for children and families to eat a healthy diet and live active lives, the better it will be for all of us. There is significant information to support evidence-based programs and services that promote healthy eating and active living in families. Replacing processed foods with fresh foods that families prepare themselves is a good place to start. That could mean looking at ways to make fresh food more affordable and easier to get in some communities. Encouraging families to eat together has also been shown to promote healthier eating. Higher rates of physical activity could be achieved by making neighbourhoods safer and more attractive for families to walk, play and connect with others. In other words, we need to look for opportunities *beyond* the family and ask, “What can we do in our communities to encourage and support healthy family lifestyles?”

Here we call on the larger community – the community of policy makers, community developers and builders, employers – to become champions for creating and supporting healthy environments for children and families. We have touched on this before, zoning, long term planning and community design, workplace policies that make it easier for families to connect and provide a positive environment for young children.

- **Access to basic medical care for pregnant women and children**

**Basic medical care during pregnancy, delivery and after birth can reduce risks and promote healthy birth outcomes for mother and child.** One important way that basic medical care makes a difference is by identifying women who do not have adequate nutrition before and after birth. Good nutrition is essential to healthy childhood development, especially early brain development.



Basic medical care can make a significant difference by identifying problems early, for example maternal depression and for the child, regular screening through the newborn period to school age for the early detection of developmental delays, including such health risks as vision and hearing impairment. The earlier problems are identified, the sooner we can provide interventions to prevent or reduce future problems.

***Basic medical care is available to all Albertans, but available doesn't always mean easily accessible.***

For example, we know that at least 12 per cent of women do not get prenatal care as early as they want it. There are some women, a small proportion it's true, who have no prenatal care at all. A shortage of obstetricians, especially in small towns and rural areas, is one reason.

Other very real barriers for women can include language, cultural background, lack of transportation, inflexible work schedules, and having other children in the home. To invest in basic medical care for pregnant women and young children we have to make it easier for families to get the services they need. The introduction of Primary Care Networks in Alberta offers an opportunity to do that, with services provided by a combination of health care professionals such as family physicians and registered nurses. Primary Care reform in the province offers the opportunity to review current health services that support women before pregnancy and after the birth of their children.

### • Early and intensive in-home support

Intensive, high quality home visitation provided by skilled home visitors can provide critical support to vulnerable families during pregnancy and in the first years of life. Effective home visitation programs have clear goals and are delivered by well-trained professional staff who engage a family during pregnancy and stay with the family for up to three years. The most effective home visitation programs have a positive impact on parenting, family functioning, maternal employment, and development of language and thinking skills and social behavior in the preschool child.

In Alberta, the Home Visitation Program, funded by Children and Youth Services, is available for first time parents who need extra support with the day-to-day challenges of parenting. The program begins in the prenatal period, or up to three months after a child is born, and can continue for up to five years. Home visitors come from a variety of human services backgrounds and are supported by community health nurses.



- **Match services to needs**

Young children who experience toxic stress – whether from abuse, neglect, severe maternal depression, substance abuse by parents or high levels of parental conflict over long a long period of time – need more targeted and intensive interventions. These interventions should provide services that are matched to the needs they are designed to meet. Early and intensive intervention can help to prevent disruptions in development and promote better outcomes. For example, individual “coaching” to increase awareness of child behaviors and teach positive parenting practices can benefit both parents and children. Treatment for mothers who experience severe depression and teaching to help them protect their children from the effects of their illness can help the whole family.



- **Support children and their parents**

Early learning programs that focus solely on the child can miss an opportunity to strengthen the environment of relationships in which children develop. Programs like Head Start were designed from the beginning to support both children and their parents who experience adverse life circumstances. Alberta’s Parent Link Centres offer a provincial network of community-based family resources that provide comprehensive early childhood development and parenting programs.

There is evidence that two-generation programs, those that provide direct supports to parents alongside high quality learning programs for children, can have positive outcomes for both. There is enough evidence to begin designing basic programs now, but more evaluation research is needed to understand the best combination of elements to meet the needs of children and their families.

In addition to two-generation programs, there is an opportunity to provide evidence-based parenting programs that can be easily accessed by all parents. By making these programs universally available, that is accessible to any family regardless of income, we can reduce the stigma that some parents feel when they ask for help and we can provide all children with healthier and more stimulating environments.



- **High quality, accessible and affordable early learning and care**

*When children don't have opportunities for positive learning in the home they can experience delays in developing language, thinking and social skills. These delays can follow them into school and beyond. High quality early learning programs, provided in a variety of settings, can help level the playing field for children who are struggling developmentally.*

The best early learning programs and child care settings have highly skilled staff, small play group sizes, age-appropriate learning activities and materials, a language-rich environment, warm relationships between children and staff, and strong participation by children. Most of the evidence we have on the benefits of early learning programs is focused on three and four year olds, but we are starting to see positive effects for programs that begin shortly after birth.

In Alberta, there are many examples of high quality early learning and care programs with dedicated and well trained staff. Unfortunately, these programs and services frequently operate in isolation, and are funded and delivered in a largely uncoordinated manner under the umbrella of individual government ministries and not-for-profit agencies.



“Increasingly, both within Canada and beyond, early childhood development and care is seen as a public good that benefits all families, as well as the broader communities in which they live. In recognition of this, most provinces have begun to reconsider and redesign how they fund and deliver early childhood education and care. The trend is to shift the focus away from either adding individual programs or improving the coordination of services to one of system building, with the goal of bringing a greater coherence, sustainability and quality to early childhood education and care.”

*The Muttart Foundation, In the Best Interests of Children and Families:  
A Discussion of Early childhood Education and Care in Alberta, December 2010.*

As a result, parents are required to choose from a limited array of options, with access to services heavily dependent on where they live, their own financial resources and their particular needs. We need to consider the programs and services we provide and how they can be affordable and accessible to all parents and children who need them.

- **A truly integrated system (across government and service organizations) for early learning and care**

We have the opportunity now in Alberta to bring together parents, early childhood educators, researchers and policymakers to agree on a broad vision for early childhood learning and care programs that are available to all families. We have the experiences of other jurisdictions to draw upon, including a number of other Canadian provinces, and a growing number of studies which highlight the need for an approach to early childhood development that brings together early learning and care environments and related family supports such as public health, recreation and culture, as interrelated components of a more comprehensive approach to early childhood development. In short, we need to consider a truly integrated approach to early childhood development, early learning and care.

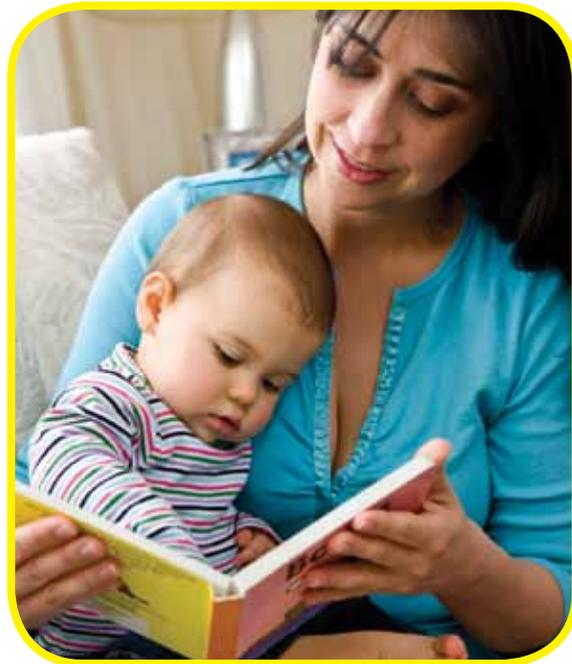


- **Income supports for parents**

**Parents need as much flexibility as possible to allow them to spend quality time with their infants and very young children.** How provinces provide support for parents with young families varies across the country, whether it is parental leave from the workplace, income supplement or other such benefits. We can carefully consider what the best mix of support options for Alberta families should be.

- **Measuring life readiness**

**We have acknowledged there are many “systems” throughout the province that collect information about young children and families.** A great deal of this information is not readily or easily shared. By combining information across systems we are in a better position to understand the “big picture” of how well or how poorly children, families and communities are doing. Additionally, we need common indicators across sectors that consider the whole child and her *life readiness*.



## From Talk to Action

In this report, we provided a common starting point for Albertans to talk about early childhood development and why it's important to all of us. We described the growing body of evidence that shows that what happens in the early years can have life-long impact on individuals, families, communities and our Alberta society. We looked at the changing Alberta family and how diversity in families presents both challenges and opportunities for our province. We explored the idea, "it takes a village to raise a child," and looked at ways families can get involved in their communities and communities can get involved in their families. To make sure we make the right investments in early childhood development, we considered how surveillance and other types of data collection can inform the choices we make. Finally, in this chapter we presented the "effectiveness factors" that area associated with the most effective actions we can take to enhance early childhood development.



## Now it's time to turn talk into action!

*The action you take can be as simple as smiling at a young child in the grocery store, especially if the child is cranky and his parent is tired! Or it can be more complex, depending on your starting point.*

When it comes to influencing early childhood development, most of us play a number of different roles. Some of these roles put us into direct contact with children in their very early years, whether we're parents, grandparents, child care providers or health care professionals. Other roles enable us to create positive and supportive environments for young children and their families in our neighbourhoods and communities. We can also influence public policy and the way public resources are allocated by saying, "yes, early childhood development is important to me!" In other words, we all have a role to play, in fact, we have many roles to play, even if we don't have young children ourselves.



## Role-playing

Think about how many roles you play in your day-to-day life. In many of these roles, you have the opportunity to directly or indirectly influence early childhood development. Which of the following roles do you play?

- Parent
- Grandparent, aunt or uncle
- Other family member
- Friend or neighbor
- Child care provider
- Community volunteer/organization
- Community service provider
- Health care provider
- School personnel (administrator, teacher, other)
- Elected official (municipal, provincial, federal)
- Business owner/employer
- Faith community member
- Cultural community member
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

*Science tells us young children are active in their own development – interacting with caregivers, community and the environments in which they live and grow.*

Every experience has the potential to impact early childhood development on more than one dimension – mind, emotions, body and spirit – and in ways that we may not even see or know at the time. In the table on the following page, we present a few simple examples of how our actions can cut across the dimensions of early childhood development to promote healthy development and life-long well-being for all our children.



		Role				
		Parent	Family, Friend, Neighbor	Employer	Business	Government
Example:		Read a bedtime story	Say a friendly "hello" to the child	Top up parental leave benefits	Offer "chemical free" products	Subsidize high quality early learning and care
Mind	Develop language	x	x			x
	Learn to think	x				x
	Explore his/her world				x	x
	Form relationships					
	Develop social skills					
	Develop self-control	x	x	x		x
	Care about others	x	x			x
	Feel safe					x
	Grow spiritually		x			x
	Learn about his/her culture	x	x	x	x	x
	Develop character					
Body	Get adequate nutrition			x		x
	Be physically active					x
	Sleep	x		x		x
	Develop healthy behaviors	x			x	x
Environment	Remove toxic substances				x	
	Promote marital harmony			x		
	Provide resources			x		
	Tell children and families they are valued		x	x	x	x
Connections	Participate in Community Coalitions					
	Connect to Parent Link Centres					
	Welcome families to the neighbourhood		x			
Resources	Affordable early learning and care					x
	Income support for parents			x		
	Promote locally grown food					

## Ready to take action?

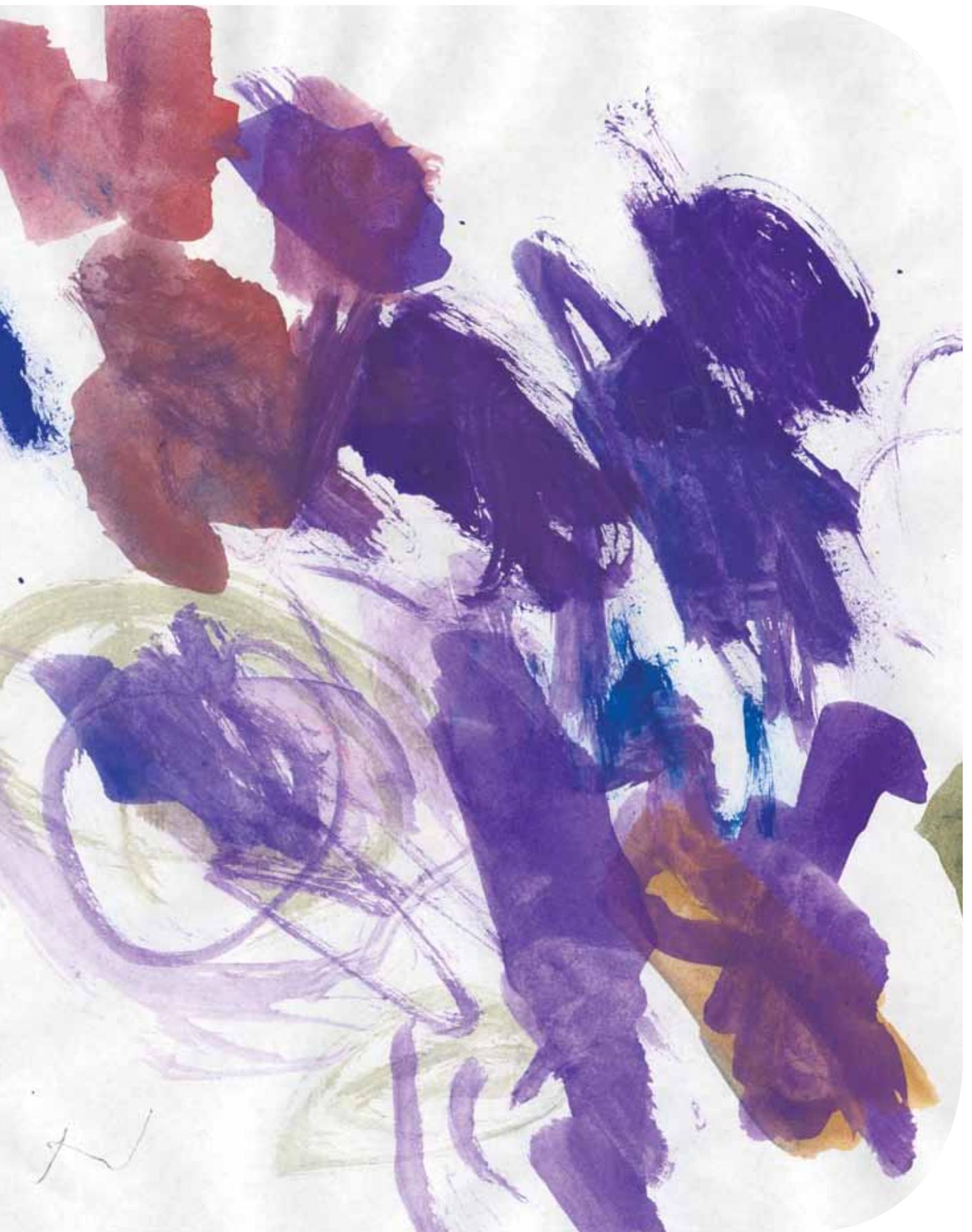
### “What can I do?”

Consider the many different roles you play and what you can do in each of those roles to promote early childhood development. Think about what you are doing now - or what you could do - to influence early child development or the environments in which very young children grow and learn. Use the chart below to “score” your actions.

		Role 1:	Role 2:	Role 3:
My action will help a young child to...		Action:	Action:	Action:
Mind	Develop language			
	Learn to think			
	Explore his/her world			
	Form relationships			
	Develop social skills			
	Develop self-control			
	Care about others			
	Feel safe			
	Grow spiritually			
	Learn about his/her culture			
	Develop character			
Body	Get adequate nutrition			
	Be physically active			
	Sleep			
	Develop healthy behaviors			
OR	I can help create a better environment for young children by taking action to...			
Environment	Remove toxic substances			
	Promote marital harmony			
	Provide resources			
Connections	Participate in Community Coalitions			
	Connect to Parent Link Centres			
	Welcome families to the neighbourhood			
Resources	Affordable early learning and care			
	Income support for parents			
	Promote locally grown food			

# glossary





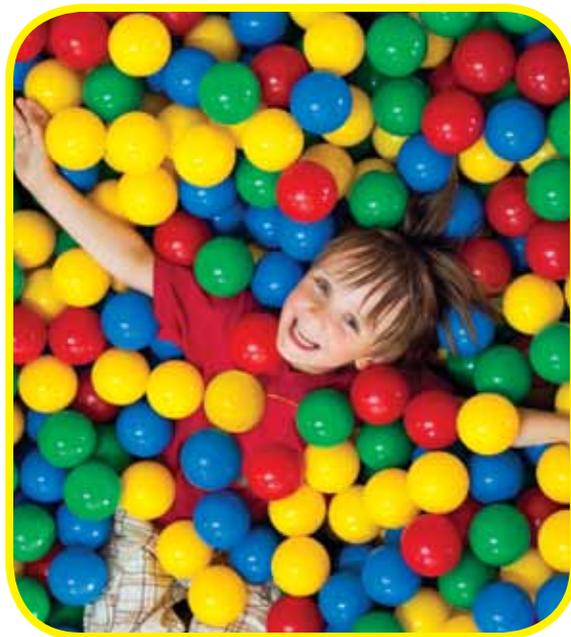
# Glossary of Terms

**Biological embedding** occurs when experience alters human biological processes. These changes are stable and long term, and influence health, well-being, learning, and/or behavior over the life course.

**Birth cohort studies** are research studies that track groups of children from their birth, and record a wide range of information about them.

**Child poverty** is defined as children who live in families where household income is less than 50 per cent of the median family income for that nation.

**Cognitive development** refers to the development of skills and abilities related to language and thinking.



**Community** is a group of people who trust one another, help one another and connect with others for a common purpose.

**Developmental milestones** are signs of physical or behavioral development or maturation in infants and children.

## Early childhood

Alberta has generally defined early childhood as 0-six years of age. Other definitions consider the age of newborn to a school age of eight. The emerging brain research would indicate the need to push the age of early childhood even beyond age six. Early childhood, for the purposes of this report, refers to the first five years of life, the period before the age of six.

**Early childhood development** refers to the many skills, abilities and developmental milestones children are expected to reach by the time they reach six years of age.

**Effectiveness factors** are those factor or influences supported by evidence that can enhance positive development in the first five years of life.

**Low birth weight** refers to the weight of infants born weighing less than 5.5 pounds (2500 grams), regardless of gestational age (i.e. can be preterm or full term).

**Perinatal** refers to the time period around childbirth, from the last two months of pregnancy to one month after birth.

**Sensitive periods** are those times of exceptional sensitivity to the effects of nutrition environment and experience on the developing child.

**Sensory pathways** are the paths or routes followed by a sensory nerve between an organ and the brain or spinal cord.

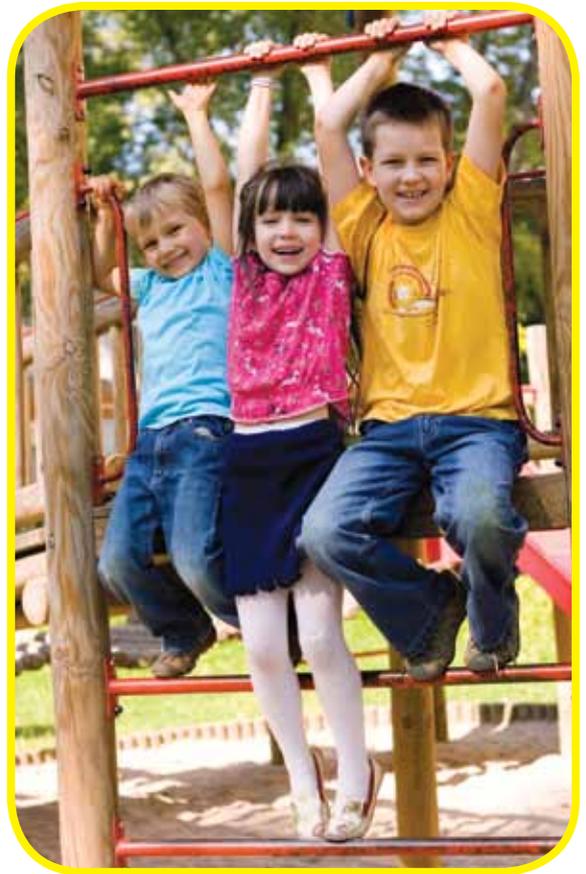
**Serve and return** describes the process by which genes and experience interact during early child development.

**Step family** is one in which at least one of the children in the household is from a previous relationship of one of the parents.

**Surveillance** is the systematic collection, analysis and interpretation of health-related data needed for the planning, implementation, and evaluation of public health practice.

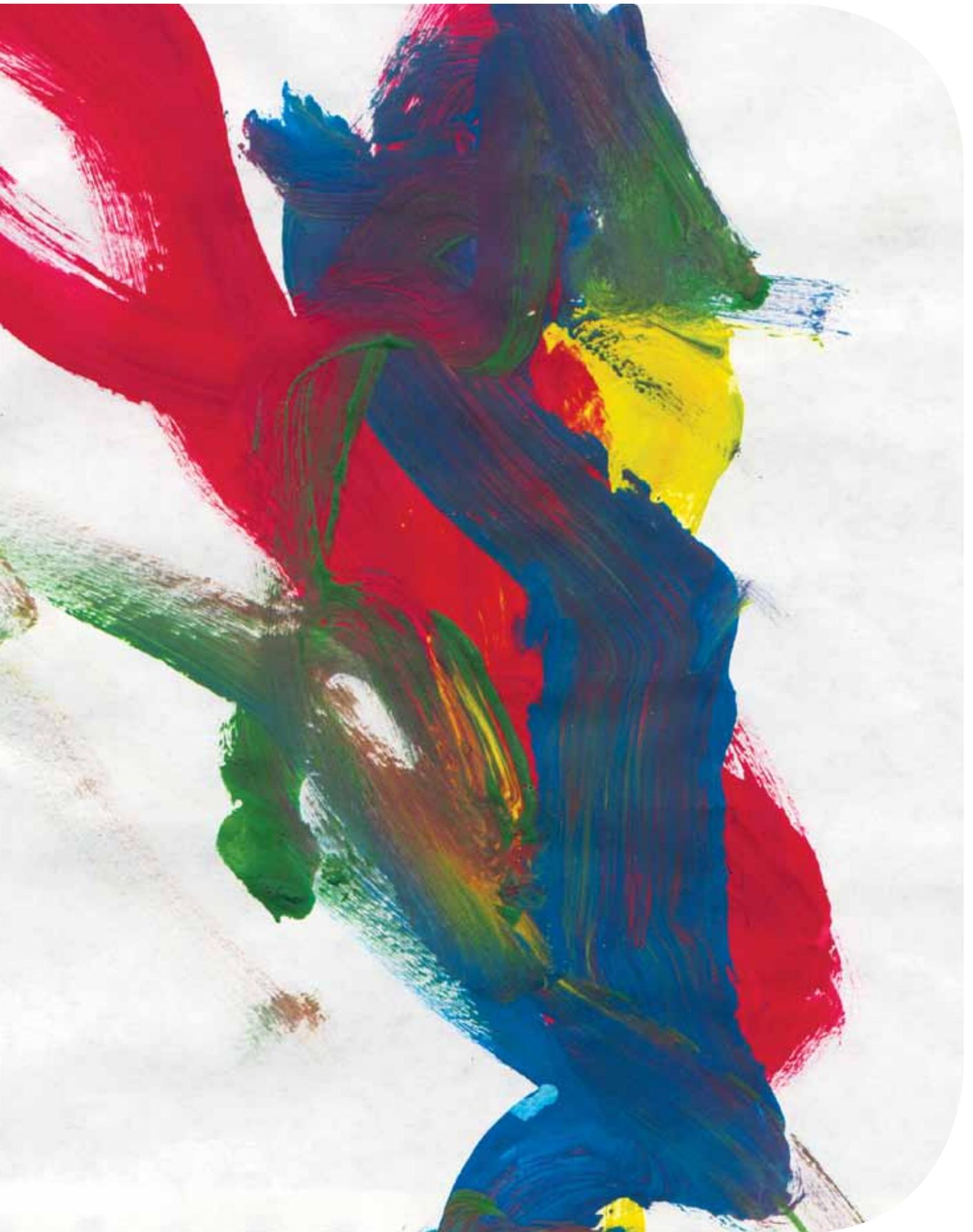
**Toxic stress** refers to the body's reaction to a chronically disruptive, abusive, neglectful or unpredictable environment – such as one marked by extreme poverty, family conflict and violence, abuse, or severe maternal depression. This experience floods the brain with chemicals that, in large, persistent doses, impair the growth of neurons and make it harder for the brain to form healthy connections.

**Vulnerable children** are those who are behind where they should be in their physical, social, emotional or language/cognitive development by a given age.



# bibliography





# Bibliography

Alberta Finance and Enterprise. *Alberta Population Projections by Census Divisions: 2010-2050*. Edmonton: Government of Alberta, 2010  
[www.finance.alberta.ca/aboutalberta/population\\_reports/2010-2050-alberta-population-projections.pdf](http://www.finance.alberta.ca/aboutalberta/population_reports/2010-2050-alberta-population-projections.pdf)  
(accessed August 11, 2010).

Angus Reid Public Opinion. "2009 Opinion Poll of Parents in Calgary Commissioned by the Calgary Children's Initiative." In the possession of UpStart: Champions for Children and Youth, Calgary.

Birnbaum, Nancy, Carol Crill Russell, and Graham Clyne. *Vital Communities, Vital Support: How Well Do Canada's Communities Support Parents of Young Children? Phase 1: What Is Known*. Toronto: Invest in Kids Foundation, 2007.

Bodor, Ralph, Leona Makokis, Cindy Dumont, Derek Chewka, Claudia Berland, Monique Sundlie, Sharon Steinhauer, Denise Steinhauer, and Carol Melnyk-Poliakiwski. *The Gathering: A Compendium of Stories and Presentations Exploring Positive, Strengths-Based Outcomes Related to Enhancing First Nations and Métis Child Well-Being of Kids-in-Care in Alberta*. Edmonton: Alberta Centre for Child, Family and Community Research, 2010.

*A Brighter Tomorrow: Improving First Nations, Inuit and Métis Maternal and Child Health in Canada*. Edmonton: Alberta Centre for Child, Family and Community Research, 2010.

<http://www.research4children.com/public/data/documents/BrighterTomorrowImprovingFirstNationsMetisandInuitHealthpdf.pdf>  
(accessed August 11, 2010).

Calgary Children's Initiative: Parenting Task Force. "Study of Community Parenting Support Services." In the possession of UpStart: Champions for Children and Youth, Calgary.

Canada and Manitoba. *A New Generation of Canadian Families Raising Young Children*. Gatineau: Human Resources Development Canada, 2003 [www.hrsdc.gc.ca/eng/cs/sp/sdc/pkrf/publications/research/2003-001330/2003-001330.pdf](http://www.hrsdc.gc.ca/eng/cs/sp/sdc/pkrf/publications/research/2003-001330/2003-001330.pdf)  
(accessed August 10, 2010).

Cunha, F., Heckman, J. J., Lochner, L., & Masterov, D. V. "Interpreting the evidence on life cycle skill formation." In E. Hanushek & F. Welch (Eds.), *Handbook of the economics of education*, 2005.

Dewey, Deborah. "The Science of Early Child Development." Calgary: University of Calgary, 2010. PowerPoint.

*Families Count: Profiling Canada's Families IV*. Ottawa: Vanier Institute of the Family, 2010.

*Fast Facts: Smart Family Policy for Strong Economies*. Vancouver: Human Early Learning Partnership, 2010.

Father Involvement Research Alliance. *About Father Involvement*. Guelph: Social Sciences and Humanities Research Council of Canada, 2010. [www.fira.ca/page.php?id=3](http://www.fira.ca/page.php?id=3) (accessed November 18, 2010).

Geddes, Rosemary, Sally Haw, and John Frank. *Interventions for Promoting Early Child Development for Health: An Environmental Scan with Special Reference to Scotland*. Edinburgh: Scottish Collaboration for Public Health Research and Policy, 2010.

Hertzman, Clyde. "The State of Child Development in Canada: Are We Moving Toward, or Away from, Equity from the Start?" *Paediatrics and Child Health* 14 (December 2009): 673-676.

\_\_\_\_\_. "Social Geography of Developmental Health in the Early Years." *Healthcare Quarterly* 13 (September 2010): 32-40.

Hertzman, Clyde and Tom Boyce. "How Experience Gets Under the Skin to Create Gradients in Developmental Health." *Annual Review of Public Health* 31 (March 2010): 329-348 [www.annualreviews.org/toc/publhealth/31/1](http://www.annualreviews.org/toc/publhealth/31/1) (accessed April 7, 2010)

*Innovative Approaches to Preschool Developmental Screening and Follow-Up Services: Learning Event II*. Edmonton: Alberta Centre for Child, Family and Community Research, 2009. [www.research4children.com/admin/content/default.cfm?PagelD=8756](http://www.research4children.com/admin/content/default.cfm?PagelD=8756).

Irwin, Lori G. *Preliminary Review of the Evidence Base for Healthy Infant and Early Childhood Development in B.C.* Vancouver: Healthy Child BC Forum, 2004.

Irwin, Lori G., Arjumand Siddiqi and Clyde Hertzman. *Early Child Development: A Powerful Equalizer, Final Report for the World Health Organization's Commission on the Social Determinants of Health*. Vancouver: Human Early Learning Partnership, 2007.

Kendall-Taylor, Nathaniel. *Experiences Get Carried Forward: How Albertans Think About Early Child Development*. Washington, DC: FrameWorks Institute, 2010.

Kershaw, Paul, Lynell Anderson, Bill Warburton, and Clyde Hertzman. *15 by 15: A Comprehensive Policy Framework for Early Human Capital Investment in B.C.* Vancouver: Human Early Learning Partnership, 2009. [www.earlylearning.ubc.ca/wp-uploads/web.help.ubc.ca/2010/01/15by15-Full-Report.pdf](http://www.earlylearning.ubc.ca/wp-uploads/web.help.ubc.ca/2010/01/15by15-Full-Report.pdf) (accessed August 12, 2010).

Lally, J. Ronald. "School Readiness Begins in Infancy." *Phi Delta Kappan* 92(3): 17-21. [www.kappanmagazine.org/content/92/3.toc](http://www.kappanmagazine.org/content/92/3.toc) (accessed February 1, 2011).

McCain, Margaret Norrie, J. Fraser Mustard and Stuart Shanker. *Early Years Study 2: Putting Science into Action*. Toronto: Council for Early Child Development, 2007.

Mikkonen, Juha and Dennis Raphael. *Social Determinants of Health: The Canadian Facts*. Toronto: York University School of Health and Policy Management, 2010.

Mustard, J. Fraser. "Changing Beliefs to Change Policy." *Isuma Canadian Journal of Policy Research* 1 (Autumn 2000): 7 pp. [wwwFOUNDERS.net/fn/papers.nsf/c85b89504068a23f8525673300768a53/9978799568a4e4f385256aee004bcd14!OpenDocument](http://wwwFOUNDERS.net/fn/papers.nsf/c85b89504068a23f8525673300768a53/9978799568a4e4f385256aee004bcd14!OpenDocument) (accessed August 13, 2010).

\_\_\_\_\_. *Early Childhood Development: The Best Start for All South Australians*. Adelaide: The State of South Australia, Department of Education and Children's Services, 2008.

\_\_\_\_\_. *Investing in the Early Years: Closing the Gap Between What We Know and What We Do*. Adelaide: The State of South Australia, 2008.

National Scientific Council on the Developing Child and National Forum on Early Childhood Policy and Programs. *The Foundations of Lifelong Health Are Built in Early Childhood*. Cambridge: Centre on the Developing Child at Harvard University, 2010.

National Scientific Council on the Developing Child. *Early Experiences Can Alter Gene Expression and Affect Long-Term Development: Working Paper No. 10*. Cambridge: Centre on the Developing Child at Harvard University, 2010.

National Scientific Council on the Developing Child. *The Timing and Quality of Early Experiences Combine to Shape Brain Architecture: Working Paper No. 5*. Cambridge: Centre on the Developing Child at Harvard University, 2008.

National Scientific Council on the Developing Child and National Forum on Early Childhood Program Evaluation. *A Science-Based Framework for Early Childhood Policy*. Cambridge: Centre on the Developing Child at Harvard University, 2007.

National Scientific Council on the Developing Child. *Young Children Develop in an Environment of Relationships: Working Paper No. 1*. Cambridge: Centre on the Developing Child at Harvard University, 2004.

Pascal, Charles E. *With Our Best Future in Mind: Implementing Early Learning in Ontario*. Toronto: Queen's Printer for Ontario, 2009.

Preterm Birth and Healthy Outcome Team. *Alberta Families: Getting Beyond the Myths, The All Our Babies Study*. Edmonton: Alberta Innovates – Health Solutions.

Raphael, Dennis. "The Health of Canada's Children. Part I: Canadian Children's Health in Comparative Perspective." *Paediatrics and Child Health* 15 (January 2010): 23-29.

\_\_\_\_\_. "The Health of Canada's Children. Part II: Health Mechanisms and Pathways." *Paediatrics and Child Health* 15 (February 2010): 71-76.

\_\_\_\_\_. "The Health of Canada's Children. Part III: Public Policy and the Social Determinants of Children's Health." *Paediatrics and Child Health* 15 (March 2010): 143-149.

\_\_\_\_\_. "The Health of Canada's Children. Part IV: Toward the Future." *Paediatrics and Child Health* 15 (April 2010): 199-204.

Reynolds, Nancy and Bob Westbury. "Best Early Start to Life, 2010." TMs. Alberta Centre for Child, Family and Community Research, Edmonton.

Rikhy, Shivani and Suzanne Tough. *Community Knowledge of Child Development, Alberta Benchmark Survey: What Adults Know About Child Development*. Edmonton: Alberta Centre for Child, Family and Community Research, 2008.

Russell, Carol Crill, Nancy Birnbaum, William R. Avison, and Palmina Ioannone. *Vital Communities, Vital Support: How Well Do Canada's Communities Support Parents of Young Children? Phase 2 Report: What Parents Tell Us*. Toronto: Invest in Kids Foundation, 2010.

*The Science of Early Child Development*. Vancouver: Council for Early Child Development, 2010. [www.councilecd.ca/files/Brochure\\_Science\\_of\\_ECD\\_June%202010.pdf](http://www.councilecd.ca/files/Brochure_Science_of_ECD_June%202010.pdf) (accessed August 11, 2010).

Severinson, Peter. "Child's Pay: Yes, Child Care Really Is an Investment in Our Future." *BC Business Magazine*, 02 December, 2009.

*Social Capital as a Public Policy Tool: Project Report*. Ottawa: Government of Canada Policy Research Initiative, 2005.

Tough, Suzanne. *Call to Action: Improving First Nations, Inuit and Métis Maternal and Child Health in Canada*. Edmonton: Alberta Centre for Child, Family and Community Research, 2009.

\_\_\_\_\_. "The Path to Economic Development Through Strategic Investments in Alberta Families." Calgary: Premier's Council for Economic Strategy, 2010. PowerPoint.

Tough, Suzanne, Karen Tofflemire and Monica Jack. *Reproduction in Alberta: A Look at the Preconception, Prenatal, and Postnatal Periods*. Edmonton: Alberta Centre for Child, Family and Community Research, 2006 (updated 2007).

Willms, J. Douglas, ed. *Vulnerable Children: Findings from the National Longitudinal Study of Children and Youth*. Edmonton: University of Alberta Press, 2002.

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