

# Love Builds Brains



This reference kit is adapted from a presentation by Dr. Jean Clinton, B.Mus MD FRCP(C): Igniting our Spirit: Empowering our Families. National Child Day Forum November 2010



Dear Presenters:

It is our hope that some form of the information presented here will work for you and your group. We understand that because of different upbringings, backgrounds, cultural differences and personal experiences that some parts of this presentation may be difficult for some participants. Please use your discretion as you present - knowing what will or will not work for the participants in your group.

We are aware that the presentation portion of the reference kit is quite lengthy. It can be used as is, but can also be used as a reference from which smaller bits of information can be used as discussion starters.

Please take the time to look through the presentation and assess what works best for your group.

This reference kit was developed by Anita Hiebert and Marlow Miller, Growing with Mom Coordinators- RHA Central. Compilation of the kits was done by Helene Fast. This project was funded through Healthy Child Manitoba.



**Research has shown that the relationship that parents or caregivers have with their babies will affect the children for a lifetime!**



## Presenter's Notes:

- The way we were parented affects the way we choose to parent.
- The things that happened in our homes growing up have influenced the people that we have become and how we perceive relationships and the world around us.
- It makes you realize how big your responsibility as a parent really is.
- As parents we are not sure that our children will remember what we do or don't do but...
- **What we do from the very first day of our child's life will influence the way that the child will feel, think and respond to the world around him/her. The first few years are crucial.**
- *Play video - Ounce of Prevention*

**A child's experiences and environment affects them forever.**



## Presenter's Notes:

### Ounce of Prevention Video

- This video shows that the environment that our kids grow up in affects them greatly.
- The good news is that the most important part of that environment is YOU! You don't need all the best videos, games or books- it's about your relationship with your child. Creating this secure, loving relationship will benefit them for the rest of their lives.
- We know that not all children will grow up in ideal situations and have an opportunity for a close relationship with a parent. However, a secure relationship with a trusted caregiver still offers great benefits for the child.



**WE ALL WANT A BRIGHT, WELL BALANCED,  
EMOTIONALLY HEALTHY CHILD.**



## Presenter's Notes:

What would you say if we told you that we had the secret to raising a bright, well balanced, emotionally connected child?

~~\$49.99~~

~~\$39.99~~

~~\$29.99~~

FREE

## Presenter's Notes:

No need for 4 easy payments of \$49.99, \$39.99 or even \$29.99.

- It is "FREE"-all it requires is an investment of time, attention and love.

Loving your child and developing a secure relationship with them is the #1 thing you can do to help build your child's brain.

**RELATIONSHIP COMES FIRST!**

## Presenter's Notes:

- If you leave here with nothing else, remember this: **Research has shown that developing a secure relationship (or attachment) with your child from infancy on is one of the best things you can do in helping build your child's brain.**
- Another way of saying this is: **RELATIONSHIP COMES FIRST** and healthy brain growth happens in turn!

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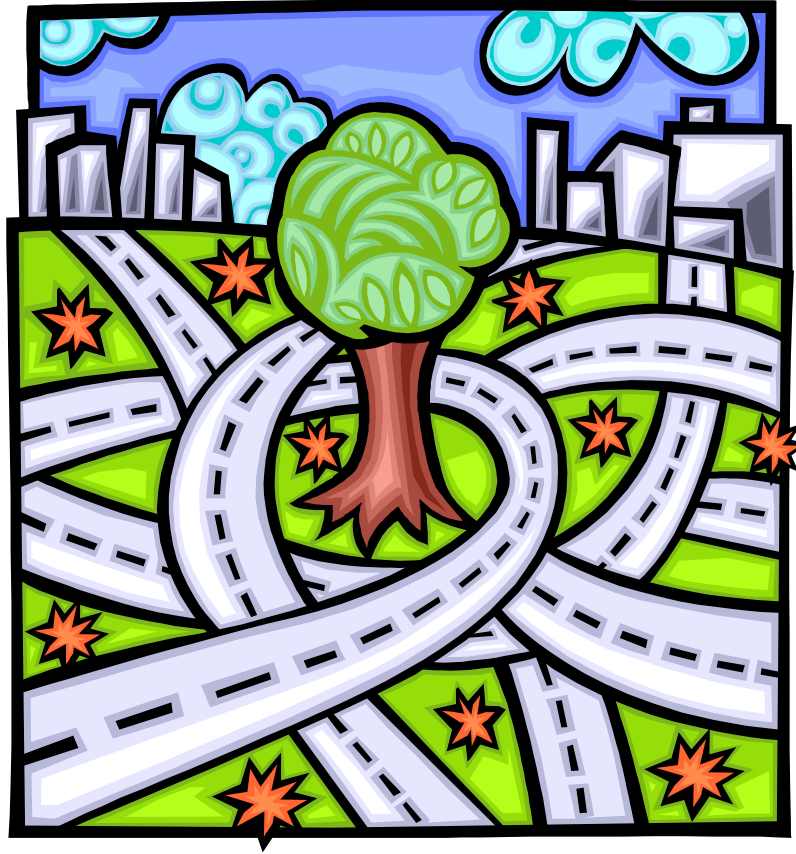


## Presenter's Notes:

- Research shows that the most important time in brain development is the first few years of life.
- Between the third trimester and age 2 the majority of pathways for learning are built.
- Babies are born with 100 billion brain cells called neurons. Very few of these brain cells are connected to one another at birth.



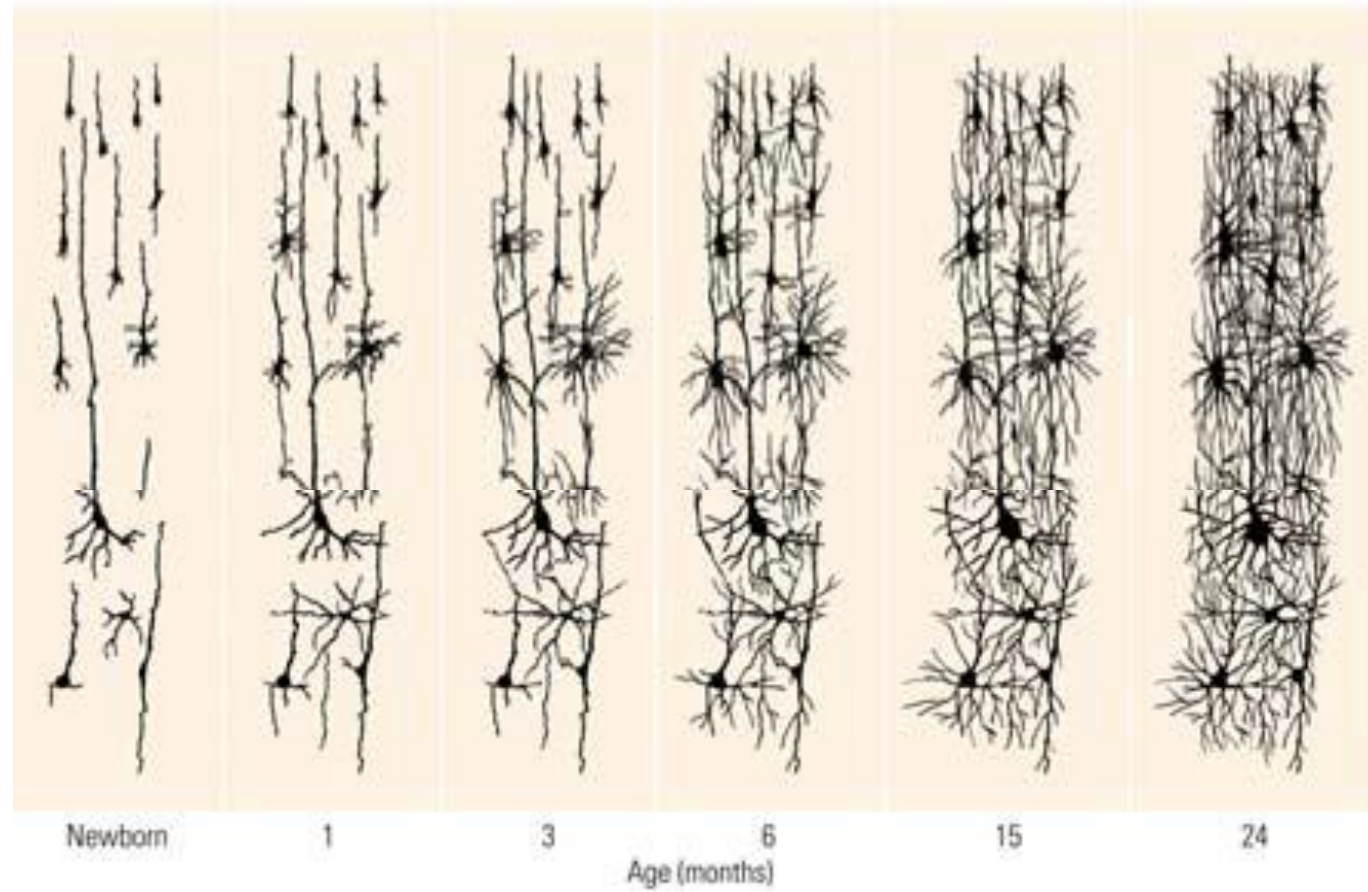
# A child's brain is like a city.



## Presenter's Notes:

- Think about the way a city or town is built. Roads must be built before any travel from a home to other places/buildings can happen.
- The brain functions the same way - pathways for information to travel on must be established in order for learning to occur. These pathways control a child's behaviour and learning.
- If these pathways in the brain are not built during the early years, the way the child learns will be affected for life.

# Brain connections



## Presenter's Notes:

- The more a pathway in the brain is used the more that path changes and the stronger that part of the brain becomes.
- If a pathway is not used, it becomes weak and does not work the way it should.

# Example

Presenter's Notes: *Choose one of these examples or use one of your own.*

- Ex. #1 - A practical example of this is a true story of a little boy named Joe. Joe came from a family where there was never any abuse and the children knew they were loved. However they were rarely hugged, kissed, or snuggled. One day Joe got hurt and stood there crying. His babysitter went over to Joe, hugged him and tried to console him. Joe's body went stiff and he didn't know how to respond to the comforting touch- his brain didn't know how to respond. The pathway of knowing how to respond to physical affection was never built.
- Ex. #2- The following real research was done in the 1970's. A young kitten was put in an environment where all it could see was horizontal lines. After a number of months the kitten was put into a regular environment where it was exposed to both vertical and horizontal lines. When any vertical obstacles were put in it's path the kitten would walk straight into it. This is because the brain pathways to see vertical lines were never built.

**RELATIONSHIP, RELATIONSHIP,  
RELATIONSHIP!**



## Presenter's Notes:

- Brain experts have proven that the relationships we have with our babies and children have a huge role in how these brain pathways are developed and strengthened.

Remember:

**RELATIONSHIP COMES FIRST!**



## Small groups:

We want to build a strong relationship with our babies so that their brains can grow. How can we help grow our baby's brains by building our relationships with them?

## Presenter's Notes:

### Small group discussions

- *Facilitate breaking into smaller groups (give each group some paper) and ask:*

**How can we help grow our babies brains by building our relationship with them?**

*Instructions for facilitator: touch on the following answers after small groups reconvene. Use the following 6 slides to be a guide for the list the groups present.*

- Responding to baby
- Breastfeeding
- Reading/ Talking
- Comfort/ Empathy
- Touch

*Also allow time to talk about the other answers groups come up with. Use visual headings mounted on blue paper as groups mention each idea.*

# Responding to Baby

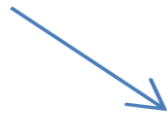
Baby cries (stress)



Cortisol level increases



Baby is comforted



Cortisol level decreases

### Presenter's Notes:

- Some people think that if you respond each time a child cries she/he will become spoiled and think they can have whatever they want. Research shows that baby's brains do not work this way.
- When we respond to our baby every time they cry, they are learning how to deal with stress and eventually learn to soothe her/himself better than babies who are left to cry.
- The only form of communication a child has at an early age is to cry.

Here is the process that occurs:

- Baby has a need (a stress) so he cries
- A chemical called cortisol is released
- Baby is comforted by parent or caregiver
- Cortisol level goes back down
- This is a normal healthy process!
- Surges of this chemical have a positive effect as it promotes learning in infants.

HOWEVER...



## Presenter's Notes:

- High levels of this chemical over any period of time (i.e. crying and not being attended to) are associated with permanent changes in the brain. This can negatively affect the way a person responds to stress for the rest of their lives.
- When baby's stress levels are down, cortisol levels decrease again and it allows their brains to focus on more important things like learning rather than using their brain for worry/stress.

# Breastfeeding



## Presenter's Notes:

### Breastfeeding

- Breast milk contains a brain boosting fat called DHA which is an Omega 3 fatty acid that we hear so much about. It is also full of other valuable ingredients that are needed for growth, development, and maintenance of brain tissue.
- Breastfeeding also provides skin to skin contact. This allows the baby to produce "happy chemicals" and reduces stress in both mom and baby.
- The close contact allows mom and baby to begin getting to know each other and building a relationship.



# Touch

Touch triggers healthy hormones in baby.



## Presenter's Notes:

- Touch such as holding, hugging, stroking, kissing and cuddling all stimulate brain connections. Actual chemicals are released in baby's brain when positive touch is experienced. This helps children learn.
- Babies also feel safe when they are held and cuddled. They don't have to worry. Their needs are being met and it frees their brain for learning.
- Looking into baby's eyes and allowing them to do the same, creates a bond and allows the baby to learn things from watching you. They can mimic you opening and closing your mouth and feel happy when they see you smile.

# Comfort / Empathy:

Show comfort and empathy especially when a child is:

1. Hurt
2. Sick
3. Upset



## Presenter's Notes:

### Show comfort and empathy:

- Research has shown that there are three kinds of situations during which it is especially important for a parent to comfort a child.
- When they are: (1) Hurt, (2) Upset, (3) Sick.
- Empathy means using words and comfort to describe a child's feelings and show understanding for those feelings.
- Showing empathy makes them feel loved, safe, and secure. "Mom or Dad will always be there when I need her/him".
- Research shows that the **outcomes** of comforting a child are life long!
  - The child learns to care about other people's feelings because someone showed understanding for *their* feelings.
  - The child in turn has healthier relationships.
  - The child has more confidence in school and life.

# Talking and Reading

Talk to your child.

Ask them how they are feeling.

Read to your child.



### Presenter's Notes: Talking With and Reading to Babies and Children:

- Start talking about a child's feelings right from birth. This allows them to feel understood.
- We all know how good it feels when we've had a rough day and our partner, friend or parent wants to know how we are feeling and then actually listens to us and seems to really understand! The same is true for children.

### When we talk to and read with children:

- Healthier relationships are formed: child has learned how to feel for other people.
- Less temper tantrums occur: child has learned words for their feelings when they are upset and have already learned that someone feels for them.
- Better vocabulary is developed: the more stories you read aloud and the more words your child is exposed to the better they will speak.
- Better reading skills are formed: children who know at least 8 Nursery Rhymes before heading off to school find reading easier.
- Better memory and listening skills are created: Reading teaches a baby about communication, introduces concepts such as stories, numbers, letters, colors, and shapes in a fun way. It also builds listening, memory, vocabulary skills, and gives babies information about the world around them.
- But best of all, when we talk to and read with our children healthy relationships are formed and this helps their brains grow.

**Children**  
**“learn how to learn”**  
**long before they start school.**



## Presenter's Notes:

- What do you think about this statement?
- Often we think that children learn the most when they get to school; that they are empty vessels waiting to be filled with knowledge. **BUT** through our discussions we've learned that long before they begin school, children develop many skills that they will use throughout their lifetime.
- Brain experts show that by age 6 kids are already fairly **SET** in the **WAY** they learn for the rest of their lives.

Of course, they will learn more 'stuff' but **HOW** they learn has already established.



We know relationships are not always easy. Understanding how your child's brain works can be helpful.

## Presenter's Notes:

- It may be easier to have more patience with your children and have realistic expectations if we can understand how their brains work at different ages.
- Rather than feeling frustrated, we can focus on the relationship with our child which is the most important part of the whole formula.



Jean Clinton's Lizard/Wizard Brain

Presenter's Notes: Jean Clinton's analogy of the Lizard/Wizard Brain (*use golf club, puppet and helmet to demonstrate*):

- Understanding the developmental stage of children helps parents to understand what their child is actually capable of. This may make frustrating times in a relationship more bearable. Jean Clinton uses what she calls the Lizard/Wizard Brain to describe what is going on in our children's brain at different ages.
- *Show golf club*- here is the basic brain stem -It carries information to the brain and instructions back to the body. The brain stem regulates our breathing, body temperature, heart rate, and digestion.
- Around the age of two the Lizard Brain begins to develop (*place puppet on the club*). The Lizard Brain is seen when kids:
  - Cannot walk past anything without touching it,
  - Hear the word "NO" but don't seem to listen,
  - Are told to stop doing something but keep doing it,
  - Get frustrated by seemingly small things.
- In short, the lizard brain is the emotional and reactive part of the brain. It overrides the sensible part that we will call the Wizard Brain.
- At this stage directing the child to a new activity or distracting them is more beneficial than punishment.
- Frustration for children is normal at this stage. This is when they need a parent to help and guide them.



## Presenter's Notes:

- As the child continues to grow and learn, the Wizard Brain starts to develop (around the age of four) - *place helmet over puppet*.
- The Wizard Brain is seen when:
  - Children are able to better accept limits without as much frustration,
  - Children are better able to follow simple instructions,
  - Children show less temper tantrums.
- However, children at this stage may still not be capable of making good decisions, have what we see as common sense, or the ability to plan ahead.
- Even though children want independence, parents need to take responsibility for their needs (i.e. packing mittens for a child on a cold day rather than expecting the child to know mittens will be needed.)

The most important thing you can do is build a  
secure relationship with your child.



## Presenter's Notes:

To summarize:

- Develop a healthy trusting relationship with your baby from day one. This relationship affects the child's brain.
- This relationship affects brain growth particularly during the first five years but will affect them throughout their life.



# Closing Activity - Rocks and Socks

## 3 Questions:

1. What is one thing you do to make your child feel loved?
2. What is one thing you do to teach your child?
3. What is one thing you do purely for fun with your child?

## Presenter's Notes:

*Closing activity (you will need to provide rocks or other small objects)*

*Everyone should take 3 rocks*

*Ask one question each time the sock is passed around and have participants answer while placing one rock into the sock.*

**What is one thing you do to make your child feel loved?**

**What is one thing you do to teach your child?**

**What is one thing you do with your child purely for fun?**

- This sock is like your baby's brain. It is growing as you teach your child but also as you love, cuddle and laugh with him/her

## Brain tidbits

### Stress response

Research shows that chronic stress in babies can affect them forever. There are many things that increase the stress hormone in a baby's body and cause their "stress response" to kick in. Some examples are:

- being left to cry without affection or comfort
- not feeding baby as soon as they show signs of hunger
- not offering comfort when a baby or child is sick, hurt or upset
- limiting body contact during feeding times
- overall low levels of human contact, stimulation, conversation and play

How a young baby's body learns to respond to stress can affect the way they respond to stress all their lives.

On a more positive note, when we respond to our babies with loving touch and comforting words their bodies release chemicals that help them relax and be able to feel a wonderful bond with their parents. These bonds turn into love and respect within relationships. When these chemicals are released consistently during the first few years, they help organize a baby's brain permanently and help them develop healthy lasting relationships as they grow up into adults.

Studies show that these babies learn to turn off their stress response more quickly than babies who are left to cry and therefore learn to soothe themselves better and actually have better sleep habits than other babies.

### Breastfeeding and the Brain

Did you know that children who were breastfed have I.Q. scores averaging 7 to 10 points higher than formula fed babies. A key ingredient in breastmilk is a brain boosting fat called DHA (docosahexaenoic acid) which is an omega 3 fatty acid that we hear so much about today. It is essential for growth, development and maintenance of brain tissue.

Touching your baby skin-on-skin during feeding also releases chemicals that create a positive feeling for baby and actually allow for better brain development.

### Wizard-Lizard brain

Have you ever seen a child (or had a child) who is always touching and grabbing everything and will not listen to their parents when told not to do what they are doing? Yes, we all have!! Do you know why? Because this is normal behaviour for kids between the ages of 1-5. Their brains are not yet developed enough to really understand consequences. And even if they know they will get into trouble (as they get older), their impulse still overpowers the consequence part of their brain. Jean Clinton calls this the Lizard-Wizard brain. Meaning that the Lizard part of the brain is that which makes kids want to do anything they please, even if it is not good behaviour. The Wizard brain is the part that tells them to "stop" because it is not a smart thing to do or because they will get hurt or into trouble. The Wizard brain only starts to develop at about age 4-5 and even then, impulse control and emotional needs are often stronger than they can control. Young children also do not share well as you have noticed. This too is normal and should be expected. They do not understand the concept of "mine" and "yours." So what does this mean for parents? When you are frustrated, try to remember that your child is still learning and his brain still developing. The best way to teach your child is by being very patient and showing them kind and appropriate ways to act. Then wait for their brains to catch up.

### Talking is Easy

Talk to your baby even before they understand the words. Research shows us that when babies hear words over and over, the part of their brain that guides speaking and language develops better. Did you know that the number of words a child hears by the age of two has been linked to the size of her vocabulary as an adult.

### Routines for Children

Don't we all like to know what is going to happen in the upcoming day or week so we can be prepared? Children are no different. Daily routines that are positive for children help reassure children and make them feel safe. When the same positive routine is followed many times children learn what to expect from their surrounding and the people around them. Studies have shown that kids who have had safe and predictable interactions with others do better in school.

### Building the Brain

Research has shown that developing a secure relationship or attachment with your child from infancy on is one of the most beneficial things you can do in helping build your child's brain and determines what their life will be like.

So another way of saying this is: RELATIONSHIP COMES FIRST and healthy brain growth happens in turn!

75% of brain development happens between the third trimester and age 2. Pathways for learning are built during this time.

Babies are born with 100 billion brain cells called neurons. Very few of these brain cells are connected to one another at birth. (except for the connections that control involuntary reflexes such as breathing and sucking)

Think about the way a new suburb or developments in a city are built. Bridges and Roadways need to be put in place first before anything else can be done. The ability to transport people and supplies in and out of the area is needed before any actual physical buildings are started.

The brain functions the same way - pathways for information to travel on must be established in order for learning to happen. There is a vital time though where if these pathways for learning are not built the way the child learns will be impacted for life.

The more a pathway in the brain is used the more that path changes and the stronger that part of the brain becomes. On the flip side, if a pathway is not developed and then used it becomes weak and can actually become useless.

### We are our Children's best teachers

So often we think that children really start to learn when they get to school; they are empty vessels just waiting to be filled with knowledge. However we now know that before they even begin school children develop social and emotional skills that they will use throughout their lifetime.

Brain experts show that by age 6 kids are already SET in the WAY they learn for the rest of their lives...wow. They will of course learn 'stuff' but HOW they learn it is already decided. We are our Children's best teachers

## Importance of Reading

Believe it or not, by the time babies reach their first birthday they will have learned all the sounds needed to speak their native language. The more stories you read aloud, the more words your child will be exposed to and the better he or she will be able to talk. Hearing words helps to build a rich network of words in a baby's brain. Children who know at least 8 Nursery Rhymes before heading off to school will find Reading much easier. (Reading teaches a baby about communication, introduces concepts such as stories, numbers, letters, colors, and shapes in a fun way, builds listening, memory, and vocabulary skills, gives babies information about the world around them.)

Talking about their feelings allows them to feel understood. How good does it feel when we've had a rough day and our partner, friend, mom actually listens to us and seems to really understand?!

So outcome- better language skills and vocabulary and again, healthier relationships as they learn to feel for other people. Also less temper tantrums as young children can use words better when they are upset and don't have to be as upset when they have already learned that someone feels for them and really understands.

## Brain Regions and functions

The Brain Stem- This area is really like the superhighway of the body. It carries information to the brain and instructions back to the body. The brain stem also regulates the things we really don't need to think about doing...regulating our breathing, body temperature, our heart rate, digestion.

The Limbic system in the brain is where emotion resides and memory begins. There are different parts that are responsible for short and long term memory and even a part that deals more with emotionally charged memories. This part plays a large role in producing our emotions especially fear.

The last part of the brain is the most advanced – the Neocortex. This part takes up 2/3's of the brain. This is where the power to develop language, abstract thought and imagination. The Frontal lobe – a large part of this area is the true center for command and control for your body. It's responsible for reasoning, problem solving, judgment and impulse control. This area is one of the last to develop – it happens when we are young adults - which answers a lot of questions for parent of teens 😊

Abstract and concrete thought are functions of this area of the brain.

If we have a better understanding of what each part of the brain does and when it develops it allows us to set much more realistic expectations of our children when we know what they are actually capable of at certain stages.

## Smoking during Pregnancy can affect your baby's brain