

Making an Impact on a Baby's Intelligence

How the power of touch makes a significant imprint on the development of children



The power of touch is quite literally what chiropractors have to offer the world. We use it to assess and correct the problems that clients ask us to fix. Through touch, we are able to help heal people who are in pain and reassure them that we understand.

And while we might not realize it, we can also use the power of touch to influence intelligence.

We have the ability to influence the brainpower of children who are under five years of age through the power of touch.

These little people, who run about our offices discovering the world with great enthusiasm, have the most complex brain activity and growth. Not only can we adjust our chiro kids to help them grow healthy, vibrant nervous systems, but we can also use our influence as professionals to educate parents and suggest ways they can have a positive effect on their children's brains.

HUMAN BRAIN DEVELOPMENT

Brain development is a process that is enormously

complex. Humans have a relatively large cranium, and babies need to birth before their heads become too big for the outlet of the pelvis. Therefore human babies arrive with the least developed brains of all other mammalian species and most of our brain development occurs outside of the womb. This means the quality of our environment can significantly influence the type of person we become.

At birth, brain development is quite rudimentary. Neurons in the brain grow and increase the number of synapses possible with dendrites of other neurons. By the time that a child is three-years-old, the number of synapses in her brain more than doubles that of an adult, with each neuron forming up to 15,000 synapses with dendrites of other neurons. (1) Between the age of two and three, the brain starts to prune synapses that haven't been used, (2) and, as the child grows, the brain eventually eliminates more synapses than it creates. At about the age of 10, the number of synapses in a child's brain decreases to the amount found in adult brains. (3)

By stimulating synapses before a child reaches five years of age, we can influence this remodeling process. Synapses

that are activated repeatedly can achieve a threshold that avoids elimination. (4)

SECURE ATTACHMENTS PRODUCE HEALTHY BRAIN DEVELOPMENT

The principal method for stimulating a baby's brain is through her attachments with parents or caregivers in the first year of life. This is the most important year for brain development. Babies evolve from helpless creatures who cannot lift their heads to little people who learn to navigate themselves in space, speak words to communicate their needs and show their emotions clearly. During the first year, a baby's brain increases its activity in the cortical and subcortical regions, especially in sensory motor function, visual and auditory stimulation and development of the frontal cortex, which helps to regulate and express emotions. (5) These stages of development strengthen babies' attachments to their primary caregivers, which, in turn, help their brains to handle the adverse effects of stress or trauma. (6)

The first year of life is about developing basic trust and security between the parents and infants. Secure attachments are formed when parents are consistent, emotionally available, perceptive and effective in responding to their children's needs. These secure attachments (7) help the child develop self-esteem, independence, resiliency, empathy, and compassion and are critical to the child's healthy brain development. (8)

In the western world, we have been led to believe that babies will manipulate their parents for attention and that letting children cry themselves to sleep builds good character. However studies have shown that babies who are attended to when they cry will cry fewer hours per day than babies who are left to cry themselves to sleep. (9)

Crying is a baby's way to communicate a need, whether it is for safety, food or comfort. Through a parent's actions, babies learn to trust the parent's authority. When parents respond to their babies cries, babies are reassured that their parents can be depended upon. Babies learn that their needs are valid and they begin to develop a positive image of themselves. (10)

THE POWER OF TOUCH

A wonderful way to help parents attach and bond with their children is through touch. Babies feel touch long before their eyesight is able to focus on their surroundings; in fact, the sense of touch develops when the embryo is forming in the mother's uterus. (11)

The well-known Harlow experiments with rhesus monkeys (12) showed that baby monkeys preferred touch over food and that if they were denied touch after birth they developed violent natures and autistic-like characteristics such as rocking back and forth. Humans' needs are no different than those of rhesus monkeys, and in North America, where babies spend much of their time in car seats, high chairs, strollers and cribs, it is not difficult to hypothesize about a correlation of decreased touch in our society and increased violence and cases of autism.

When infants are not touched, they experience a decrease in brain development as was witnessed in the case of orphans in Romania, who had been fed and changed, but not touched. (13, 14) Their cognitive and social skills were poorly developed compared to children of the same age who had been nurtured during their childhood. According to James Prescott, there is a link between poor attachment and violent behaviour in adolescent children. (15) His study showed that civilizations in which parents demonstrated physical affection such as touching, holding and carrying their children tended to be more peaceful, while civilizations that did not show physical affection towards their infants had more violent societies.

Infant massage is an easy and fun way to promote touching. Massaging babies promotes the bonding and attachment processes, helps babies gain weight and sleep more easily, provides relief for colicky symptoms, improves respiration and digestion, enhances neurological development and reduces stress. It is especially beneficial for premature and drug addicted babies, special needs and adopted children. (16-25)

THE ROLE OF CHIROPRACTORS

Chiropractors can help educate and influence parents as to how they can change the outcome of their babies' health. Here are a few suggestions of what you can do in your office to help promote bonding and attachment between parents and their children.

Offer infant massage courses. The International Association of Infant Massage (IAIM) offers excellent training for infant massage instructors. You could offer classes in your office during times when you are not seeing patients. To find an infant massage instructor near you, log onto the IAIM web site at www.health4all.com/infantmassage.

Encourage either the mother or father to spend the first year of the child's life at home. The bonding and attachment process is crucial to healthy brain development. Babies who are securely attached enjoy better physical health, emotional adaptability and improved intelligence. (26) Now that the Canadian government offers one-year maternity leaves, it is much easier to take the time to be with our children.

Encourage breastfeeding. Breastfeeding not only offers a superior food substance that in itself can increase intelligence, (27, 28) it offers different stimulation to both sides of the body. While breastfeeding, babies' deep touch receptors are stimulated on the side that lies close to their mother's abdomens. Mothers also tend to play with the baby's exposed arm and leg, which stimulates the light touch and proprioceptive receptors. When the baby changes sides to feed, the opposite effects are noted. Encourage mothers who bottle-feed to hold their babies to mimic the alternating position of breastfeeding. Bottle-fed babies are often held with the dominant arm for every feeding, which stimulates the same sides of the baby's brain for every feeding. Sometimes babies are left to feed themselves in high chairs or car seats, which should be discouraged as it

provides no stimulation at all.

Help mothers suffering from postpartum depression get professional help if they have not done so already. Depressed mothers do not interact with their babies as much as non-depressed mothers do and they often fail to respond to their babies' cries and needs. (29, 30) Depressed mothers are also less likely to touch their babies. (31) If this inattentiveness continues for longer than six months, babies are more likely to become withdrawn, less active and have shorter attention spans.

Encourage skin-on-skin contact between babies and their parents whenever possible, especially in the first few months of development.

Encourage mothers to carry their babies around on slings while at home. Babies who are carried throughout the day cry less than babies who are not. (32) When babies are developing inside a mother, they hear and feel their mother's heartbeat, respiration and digestion. By carrying a baby close, they connect back to the sounds that they find most comforting.

Hug the little people (and the big people) in your office. We all benefit from the power of touch. •

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Dr. Melanie Beingessner graduated from CMCC in 1997. She is currently in practice at Synergea Family Health Centre, a multi-disciplinary facility that offers collaborative care. She is also a breast feeding counsellor and certified infant massage instructor as well as the mother of Cody and Kayla.