

BLOG TWO – January 2019

‘All children’s brain development matters, but babies matter most’

During the last five years or so a growing body of research has stressed the importance of the early years to the development of children, adolescents and adults, and of early intervention when it is needed. Last year, in particular, some of those research findings came out of academic papers and into books and reports, many of them from government, and from there into media. It really looked as if the message about the early years had got home. Which early years though?

Most people still think of the early years as post-babyhood and pre-school so it is still not generally recognised that an infant’s brain development, from long before birth to at least the second birthday, is crucially important to his or her mental and physical health and wellbeing through childhood, adolescence and adulthood. And it is not generally accepted that early social and emotional experiences with parents play a crucial part in building those brains during the first two years.

Why is the prime importance of infancy still often disregarded? The message that the first 2001 days of life are critical is not like messages about the dangers of smoking or the catastrophes of climate change. A lot of people did not want to believe those because they wanted to smoke where they pleased and chuck out rubbish without a thought for the environment. People had vested personal interests in ignoring, even denying arguments such as those and some, including President Trump, still do. But who’s got a personal interest in disregarding the relative importance of babies’ brain development or its dependence on relationships with parents? *Maybe mothers and fathers.*

It is a fact - not just an opinion - that an infant’s emotional environment shapes him or her, emotionally, psychologically and neurologically, for good or for ill, forever and that it consists almost entirely of relationships and interactions with the parents or their surrogates. This is not information that is universally welcome. Nobody wants to think about how vulnerable babies are to suffering: to abuse or other trauma, to separation from parents or neglect by them, or to any recurrent or constant stress. Nobody wants to think about it so many people who have no direct contact with babies don't think about them at all and have scant empathy with friends and colleagues who are recent parents. Mothers and fathers think about infants all the time, of course, but are not always comfortable facing the responsibility of their own and each other’s overwhelming importance to their child. To some parents, the idea that their constant interactions and overall relationships with a baby or toddler (or the lack of them) are likely to leave lifelong results is terrifying.

It has to be faced though.

When a baby is born his brain is still an unfinished project and the project is 'parents'. It can only be optimally completed within the social and emotional relationships that now make up his environment. It takes most of the first year for a human infant to reach the level of development most mammals have achieved at birth. The longest period of complete dependency experienced by any species permits and even requires an intense social bond to develop between parent (or other caregiver) and child.

At least three quarters of the upper brain – the cerebral cortex whose eventual great size and complexity comprises everything that makes our babies human - grows and develops its interconnections only after birth. The baby's genetic inheritance is there from the beginning, of course, but the extent to which some or all of those genes will be expressed and the baby's genetic potential fulfilled, depends on social input from his environment.

In the first two years the mother, the father, or whoever is the child's primary attachment figure is an infant's environment and any interruption of the contact and the attunement between them is stressful. When researchers compare children of any age on any aspect of development, language, say, or persistence in learning, resilience when things go wrong, or sociable play with other children- the tuned-in-ness and responsiveness of their principal attachment figures (usually their mothers) in the first year explains more of the difference between high and low achieving children than anything else, more even than socio-economic disadvantage.

If a baby doesn't have a loving special adult — being cared for perhaps in an institution, or receiving minimal adult attention, or attention that is inconsistent or inappropriate - the structure and chemistry of his brain will probably adapt defensively. He may develop extra strong fear and anger reactions, or intense attack and defence impulses in his deep primitive right brain. He may become hyper-vigilant, his brain suffused with the stress hormone, Cortisol, which floods his body until someone turns it off by comforting him.

The responsibilities of a parent to a baby are immense but they are not as alarming as we sometimes let them seem because they are not only about protecting the child from negative experiences but also about providing and enhancing experiences that are positive.

For optimal growth and development a baby's brain requires a balance between different biochemicals and it is positive, enjoyable interactions with the mother, or a nurturing person, which balance out stress or distress. For example, early loving experiences, cuddles, games and laughter, increase the infant's glucose metabolism, and higher levels of glucose washing through the growing brain increase the richness of its network of neuronal connections. The uptake of glucose depends on the numbers of dopamine receptors that develop in the baby's brain. Dopamine enhances the capacity for pleasure - and the anticipation of pleasure throughout life that we summarise as optimism - and also produces an energising and stimulating effect that has earned it the nickname "the feel good hormone". A baby who experiences high levels of warm, rewarding contact with the primary attachment figure (and/or is particularly successful in the genetic

lottery) is likely to develop a brain with high numbers of dopamine synapses. In contrast, a baby who lacks affectionate contact with his mother or mothering person, or lives with high levels of stress, may have a permanent scarcity of dopaminergic neurons because stress hormones, such as cortisol, effectively "turn them off". A parent's pleasure with, and in a baby makes a vital contribution to the optimal brain development that not only gives a new child the best possible start in life but also enables him or her to make the most of the lifetime which is to follow.

In the last fifty years the frontiers of medical science and associated technology have been pushed forward without a matching commitment to social science and human relations. We know much more about the reproductive biology of parenthood than we know about the social, emotional and psychological impacts of parenting, and we devote far more resources to infants physical health than to ensuring their mental and emotional health. While contraception, immunisation and a host of childcare aids have dramatically reduced the burdens of traditional mothering, that role itself has been partially downgraded and not replaced with a workable restructuring of gender roles and relationships.

What is needed now is a reappraisal of the importance of parenting in the first two years of life and fresh approaches to supporting parents.