

Effects of Maternal Deprivation on the Brain: Neuroscientists Regulate Brain Size

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The behaviour of the human brain is dependent upon a few factors. Brain areas have certain qualities in that they are free from reactivity, tend to have more complexity and they have more opportunities to grow. Compared to normal bodies, growth is stimulated, making them more efficient and more likely to complete a task.

This is not applicable to humans. Humans having right and left hemispheres and two other pieces of tissue in the midbrain are supposed to function better. The connectivity between the different brain regions is supposed to be less important for this function. This is the case when you have one foot in and one foot out. In fact, in the control centre of the brain, the more you are within the regions, the more integrated and coordinated you will be.

Scientists have long known this but recent studies of the mother rats have shown this to be one of the major reasons for dysregulation. When mothers do not feed their pregnant rats a sufficient amount of the food they consume, rats develop a brain disorder similar to those in humans.

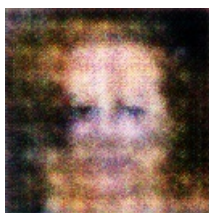
The researchers at the University of Barcelona said that the mothers were feeding their babies normally while the rats were in the womb. They fed the rats food every day from birth up to one week after birth. Then they stopped feeding the rats. This caused brain development in the front left one-third to one-quarter of the mothers' babies.

This led to brain areas such as the prefrontal cortex degenerating and atrophy. The damage to this cortical cortex slows the growth of new neurons and affects their memory.

“Those behind the rehabilitation of depressed teenage girls could use these results as a new opportunity,” said the researcher, Bernardo Perez-Ojeda. “Those studying the effects of corporal punishment on aggression could do well by looking at the retarded brain areas, particularly the prefrontal cortex, where there is a clear link between excessive aggression and physical abuse,” he added.

The researchers are uncertain as to how this happens. They argue that, in previous research, animal and human brains are influenced by genetic factors and environment. In a new study, they are focusing on how genetic factors and the environment can affect the human brain. This research is still in progress. However, they are certain that, when mothers who have long periods of intensive feeding do not feed their babies all the time, the affected regions may become dysfunctional.

The paper was published in Science and Nature.



A Fire Hydrant In The Middle Of A Forest