DR. MICHAEL MEANEY: MORE CUDDLES LESS STRESS!

by Liz Warwick

As a young undergraduate, Michael Meaney was wavering between biology and psychology. Then he came across studies showing that stimulation in early infancy could alter stress responses in rats. "I was immediately taken with the question of how such effects occurred and how they persisted over the lifetime of the animal," he says.

he James McGill Professor of McGill University's Departments of Psychiatry and Neurology and Neurosurgery has a special interest in maternal care and how differences in such care can modify an individual's brain development and the ability to deal with stress later in life.

MOM'S ACTIONS MODIFY DNA

Many of his recent experiments have focused on animals—often rats—who show either high or low levels of nurturing care through licking and grooming their offspring. By studying the offspring who received different levels of care, Meaney and his colleagues have made a startling discovery: the kind of care a mother gives to her offspring alters the chemistry of the DNA in certain genes involved in stress response. Animals who received a great deal of licking and grooming produced fewer stress hormones when dealing with a challenging or stressful situation than the rats who received less care. The effects continued into adulthood, an important point given that stress hormones have long-term effects on the body. When too many of these hormones are produced over a long period of time, there is an increased risk for chronic problems such as heart diseases and diabetes.

Meaney's work with animals suggests that security is key to healthy outcomes for



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kids. "Secure offspring, regardless of the species, secrete higher levels of growth-promoting hormones and lower levels of stress hormones. The issue then is the nature of the behaviours that favour security in children." To find out more about these behaviours—and the situations that favour or work against them—Meaney is now doing a significant part of his research with human mothers and children.

HELPING PARENTS COPE WITH STRESS

However, whether his research subjects are humans or animals, Meaney says the implications of the work he has been doing are clear, and suggest a profound need for policies and practices that support families and children, especially in the early years. "Women's health is critical," he says. "The single most important factor determining the

health of the mother"

mental and physical

"The single most important factor

interactions is the

determining the quality of mother-offspring

quality of mother-offspring interactions is the mental and physical health of the mother. This is equally true for rats, monkeys and humans."

However, policy-makers must keep in mind that parental behaviour, like any other behaviour, is determined by environmental conditions. So parents living in poverty, suffering from mental illness or facing great stress are much more likely to be fatigued, irritable and anxious. "These states clearly compromise the interactions between parents and their children," he says.

Finally, he adds that people tend to get too involved in pointing out differences between humans and other species. "The fundamental message for public policy is that the health of the mother will determine the development and health of the offspring. In fact, this is no less true for insects than for humans."