

# What About The Children?

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## RESEARCH SUMMARY

### **Parental Oxytocin and Early Caregiving Jointly Shape Children's Oxytocin Response and Social Reciprocity**

R Feldman, I. Gordon, M. Influx, T. Gutbir, R.P. Ebstein  
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Past research led us to believe that the parent-infant bond provided the foundation for the infant's future social relations and nurture of the next generation. Animal studies showed that the mother-infant bond affects the infant's physiology, stress levels and social orientation. Recent studies on animals also demonstrated the part the hormone oxytocin played in social bonding and how it is affected by patterns of maternal care such as licking and grooming. Oxytocin (OT) forms part of a feedback loop whereby the care a mother demonstrates to her young shapes the oxytocin levels of the infant, which in turn affect the care they give their own offspring. There is a lack of longitudinal studies in humans which could demonstrate the effect of early caregiving on the infant's future OT response and show any impact of the feedback loop on any attachments beyond the mother-infant bond.

It is suggested that the three forms of attachment in humans – parental, romantic bonds and friendship – affect OT levels. Studies are needed to show the effect of both parental OT and early caregiving to the child's OT response and social reciprocity in order to improve our understanding of human attachment, and to develop suitable interventions for events which interrupt the mother-infant bond such as post-natal depression or premature birth. Close friendships are associated with good mental health, physical well-being and life satisfaction. Children begin to develop a bond with their first 'best-friend' between the age of three and four. Relationships with peers at this age are a reflection of a mix of parental attachment, self-regulation, low aggression and parent-child reciprocity over the first few years. All of these factors influence a child's early friendships.

The goal of this prospective, longitudinal study was therefore to examine the cross-generational transfer of human attachment by integrating genetic and hormonal measures with observation of social behaviour in multiple attachments over a period of time. Levels of OT in the parent's blood as well as variations on certain genes were measured alongside observations of parenting behaviour at one and six months after the birth of their first child. At three years of age both the child's and parents' salivary OT levels were measured and the child's social reciprocity with their mother, father and first 'best-friend' were observed. The two genes that were selected were ones that have been shown to be related to an increased risk for certain disorders such as autism and major depression. The researchers expected that the parents' OT levels and parenting style would be stable over time and correlate with optimal variations on the genes. Each of these factors was expected to predict the child's OT response and reciprocal behaviours towards family and friends. Finally, it was also expected that more optimal genetic variations on the parent's genes would combine with early parenting to shape the child's OT response.

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The study was carried out on 160 parents when the children were one month old, with 128 being included at six months and 98 when children were three years old. The visit at three years also included 50 first 'best-friends' of a similar age. All assessments were conducted in the parents' homes.

Early care from the mother was shown to relate to the closeness of the relationship between mother and child at three years, whilst early paternal care was unrelated to the relationship between father and child at three years. This showed that mothering had a greater continual influence from infancy onwards compared with fathering.

The quality of the child's relationship with a best friend was related to the quality of their relationship with their mother, but not their father. The relationship between child and best friend was not related to the care received from either parent, but instead, the authors suggest, could be due to the continuity of the mother's style of parenting and the parent's effect on child OT levels. Children whose mothers had a low OT risk (genetic risk of autism, depression or low levels of empathy) showed better quality of relationships towards their best friend compared with those whose mothers had a high OT risk. However, the fathers' OT risk was unrelated to the quality of the child's friendships.

Attachment theory suggests that a child's capacity to form bonds with people outside their family is shaped by their experiences of their bond with their mother. This study has shown results which support the attachment perspective. It also showed that the child's early experiences of care are partly shaped by the parents' OT and that this together with early parenting, support the child's ability to form multiple attachments. It was shown that parents' OT levels were stable over several years, which, it is suggested, can represent levels of sociability, empathy and ability to form friendships over the long-term. Mothers' sensitive caring was stable over time, although fathers' was not. This is similar to results from animal studies which show maternal behaviour patterns are stable over time and through generations, whilst human studies have suggested that fathering is less innate and develops within the context of mothering. Although both mothers' and fathers' OT contribute to the development of child OT it is the child's stable relationship with the mother, not the father, that predicted the child's relationship with a friend. Animal studies have shown that adapting to different kinds of maternal behaviour whilst the animal's brain is developing alters the brain's stress response and forms the animal's range of behaviour and social orientation. Similarly, in humans the mother's OT risk and genetic profile relates to the child having poorer relationships with friends, whilst the father's genes and hormones do not.

Consistent with attachment theory, the mother's OT system provides a connection between the infant's bond with its mother and its attachments to non-family members. Therefore, maternal care could affect both the father's care and the child's physical and emotional responses to others outside the family. This suggests that the first six months of parenting are particularly important for the child's social adaptation and as a focal point for intervention. During this time interventions that enhance parental care, increase the father's involvement and promote maternal touch – which releases maternal OT – could have long-term positive effects on the child's social growth.

Friendships are an important part of an individual's well-being and are necessary for health, longevity and life satisfaction, with a number of psychiatric conditions being associated with the inability to make and keep close friendships. Previous research has shown that peers can act as 'therapists' when parenting is deficient, particularly in early childhood. At around three years old children begin to form friendships with children their own age, drawing on both social learning from their parents and their own OT system. Their OT system is involved in motivation to bond with others, provides understanding of social cues and reduces the stress involved in joining new social groups. This stage could provide opportunities for intervention when necessary.

Future research should look at the cross-generational transfer where there are marked disturbances in mother-infant bonding, such as through traumatic childbirth, prematurity, high risk or mother's inability to bond due to post-natal depression. Long-term studies which can follow infants through to adulthood and examine the role of genes, hormones and early care on the child's capacity to form friendships, fall in love and provide adequate parenting of their own child, are essential in order to provide a greater understanding of human attachment. In conclusion, the study showed results which support the attachment perspective. The mother's relationship with her child and her style of parenting affected the quality of the child's first friendship and, most importantly, it was mothering that had the greatest continual influence on the child.

Dr C. Cunningham