



RESEARCH SUMMARY

Transition to Child Care: Associations with Infant-Mother Attachment, Infant Negative Emotion, and Cortisol Elevation

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Humans and other primates produce the hormone cortisol in response to stress. Several studies have shown that cortisol levels are raised in very young children when they are in stressful situations. In this work, Ahnert and her colleagues have shown that toddlers in child care had significantly raised levels of cortisol. Even after the children had adapted to day care without their parents for three months, their cortisol levels were indicative of chronic, mild stress.

The study took place in Germany where, thanks to generous maternity allowances, few children start nursery care until they are ten months old. It is also common for mothers to remain in nurseries with their children for the first few days or even weeks. Seventy toddlers in their second year (between 11 and 20 months when the study started), 36 of them girls, were studied before they entered childcare and for the first few months. About half the toddlers were rated as being securely attached to their mothers at the start of the study. Cortisol levels were measured using samples of saliva obtained, non-invasively, by allowing the children to suck sterile cotton pads that were sometimes inserted in pacifiers. Samples were obtained from the children at home before childcare started, and in the nurseries with their mothers present (the adaptation phase); during the first two weeks after separation; and after five months. The children were also videotaped for the first 30 minutes on each child care day studied and instances of negative emotion (fussing and crying) recorded.

Not surprisingly, the researchers found that levels of cortisol were raised as soon as the toddlers entered the child care centres, as these – with often a large number of adults and other children at present – would represent very strange situations for infants cared for at home. During the adaptation phase, the increase was much smaller in the children that had been rated as securely attached; however, after separation, both groups of children had cortisol levels about 75% to 100% higher than those measured at home (Figure 1). After a few months in the child care setting, levels had dropped but were still significantly raised. This cannot be simply due to cortisol levels rising during the second year, as there was no correlation between the initial cortisol levels and the children's ages when they entered the study. The proportion of time during which the children displayed negative emotions also increased in child care, rising to a peak on the first day of separation (most markedly in insecure infants) and then dropping off to the level that was observed during the adaptation phase.

Large rises in cortisol levels have been shown to cause physiological problems including, for instance, memory deficits and immune system suppression. It is not clear whether the small rises shown here might also have a physiological effect. It is, however, clear that day nurseries are stressful places for one-year-olds, and that even secure attachment to their main caregivers do not buffer them from this stress.

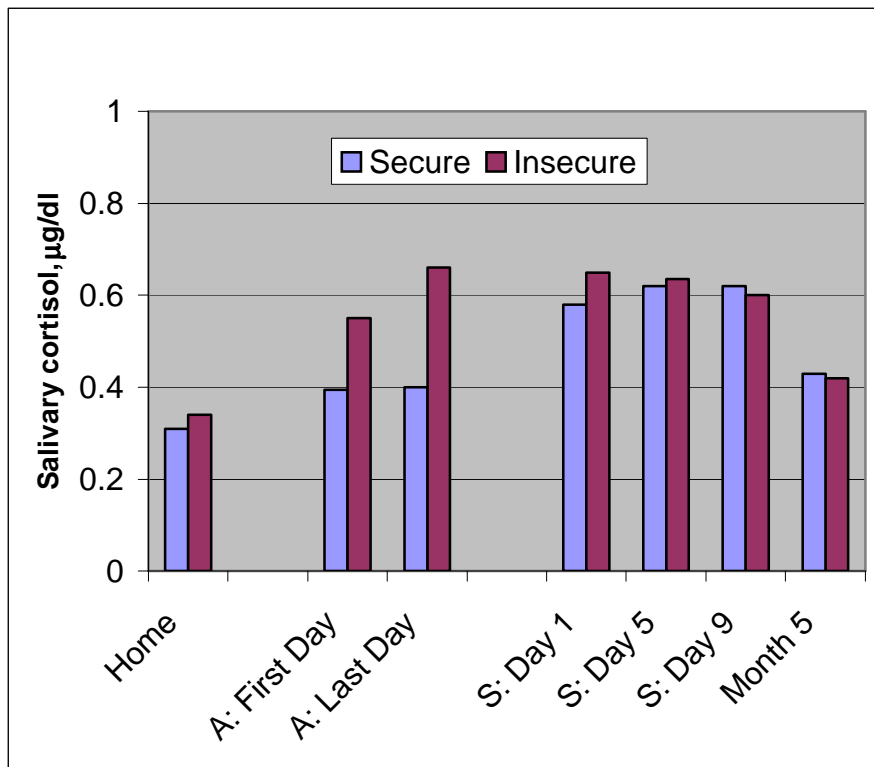


Figure 1

Cortisol levels in secure and insecure toddlers before and during adaptation to child care.

A: Adaptation Phase (mothers present); S: Separation Phase

Summary by Dr Clare Sansom