

Public Abstract

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PITUITARY-
AXIS: AN ONTOGENETIC PERSPECTIVE

On the basis of life history theory, the delayed reproductive maturity represented by an extended period of childhood and juvenility in humans is predicted to be important for learning cultural, social, and ecological skills that help prepare the child for the adult socio-competitive environment. The human child is extremely sensitive to the social milieu and it has been proposed that the type of early social and biological environment shapes life history strategies. During this developmental period, boys and girls show behavioral sex differences in play and social interactions. The hypothalamic-pituitary-adrenocortical (HPA) axis, with its products cortisol and dehydroepiandrosterone (DHEA), is expected to play a pivotal role mediating the relationships between the social environment and an individual life history strategies. Yet the processes that underlie the biological embedding of social information remain unclear in humans. Drawing from this background, The present dissertation aimed to investigate the family and peer influences on the child HPA and socio-cognitive development. Using a multidisciplinary approach spanning from human biology, cultural and cognitive anthropology to human ethology, this work illustrates that the early mother-child relationship plays an important role in the development of the child baseline and reactive HPA activity. Specifically, a strong mother-child bond predicted lower levels of daily DHEA, while a low mother-child bond correlated with high cortisol before a video-recorded interview. Low maternal investment measured as time spent breast-feeding the child predicted lower cortisol and DHEA concentrations in boys and girls, while more maternal investment was associated with higher cortisol only in girls. This dissertation also reports data on the potential physiological mechanisms of sex differences in peer network during mid-childhood. It was demonstrated that in the population under study children social network is sex segregated, boys tend to have higher clustered friendship ties than girls, but that DHEA is not associated with these behavioral outcomes. Finally, the study reports the effects of coalitional competition on the HPA and hypothalamic-pituitary-gonadal (HPG) axis activity in children and teenagers.