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Adrenocortical reactivity and social competence in seven year-olds

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Abstract

We examined temporal changes in salivary cortisol in response to a peer self-presentation task in a group of seven year-olds, some of whom scored high, average, and low on the Harter (1983) Perceived Social Competence Scale. Salivary cortisol was measured pre-task, and 20 and 35 min post-task. We found a significant relation between individual differences in perceived social competence and salivary cortisol reactivity in response to the task. Children who perceived themselves as socially competent exhibited a significantly greater decrease in salivary cortisol from 20 to 35 min following the task compared with children who self-reported a relatively lower degree of social competence. We speculate on the meaning of salivary cortisol changes in children's socio-emotional development. © 1999 Elsevier Science Ltd. All rights reserved.

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1. Introduction

Socially competent children, unlike shy children, display a short latency to approach social novelty, appear to be at 'ease' in play groups with unfamiliar peers, and are socially outgoing. Socially competent children also appear to be more successful in regulating the arousal of negative affect during socially evaluative situations compared with shy and socially anxious children. We

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know, however, comparatively little with regard to how socially competent vs shy children regulate stress during socially evaluative situations.

We (Schmidt et al., 1997) recently found that preschoolers who displayed a high proportion of social wariness while interacting with same-age and same-gender peers exhibited high morning salivary cortisol levels. Also, a number of others have linked high cortisol to fear, distress and related constructs in human infants (Gunnar et al., 1989), shyness and inhibition in children (Kagan et al., 1987; Nachmias et al., 1996), shyness (Bell et al., 1993; Windel, 1994) and agitated depression in adults (Gold et al., 1988a; 1988b), and fearfulness in nonhuman primates (Champoux et al., 1989; Kalin and Shelton, 1989; Levine et al., 1987). The relation between elevated cortisol and fearful and anxious behavioral profiles, however, is not a foregone conclusion. Elevated cortisol has been noted in bold and exuberant children and dominant, rather than submissive, non-human primates (see Gunnar 1994, for a review).

The purpose of the present study was to extend our previous research on the relation between cortisol and social development in children (e.g. Schmidt et al., 1997) and to clarify some of the apparent inconsistencies on this relation in the extant literature. We examined temporal changes in salivary cortisol in response to a self-presentation task in a group of seven year-olds, some of whom scored high, average, and low on the Harter (1983) Perceived Social Competence Scale for children. Salivary cortisol was measured pre-task, and 20 and 35 min post-task. We chose to measure cortisol because this stress hormone may provide a window into the origins of emotion regulatory and dysregulatory processes in early school age children during socially evaluative situations. The early school age years are a particularly important period in development as the age point coincides with the child's entry into school and the establishment of peer relationships.

We expected that children who scored high on perceived social competence would display a significantly greater decrease in saliva cortisol following the self-presentation task compared with children who scored relatively lower on the self-report social competence measure. In the present paper, we report the relation between individual differences in children's self-perceptions of social competence and temporal changes in salivary cortisol in response to the task at age seven.

2. Method

2.1. Subjects

Subjects were 48 children (28 males, 20 females) who were recruited at age four from local area preschools for a larger longitudinal study designed to examine socio-emotional development during the preschool and early school years. The children were unselected for personality differences, primarily Caucasian, from middle class backgrounds, lived in the suburban Washington, DC area, and experienced no pre- or post-natal health problems. Details concerning recruitment and procedures used during the laboratory visit at age four are presented elsewhere (see Fox et al., 1996).

Of the 48 children seen at age four, 39 returned to the laboratory at age seven. The focus of the analyses reported herein is on the salivary cortisol, behavioral, and self-report measures collected at age seven.

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