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Effects of a therapeutic intervention for foster preschoolers on diurnal cortisol activity.

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Studies have shown that children who encounter early life adversity, such as loss of a caregiver or maltreatment, can develop atypical patterns of hypothalamic-pituitary-adrenal (HPA) axis activity, as measured by salivary cortisol levels. Rather than peaking in the AM shortly after waking, the cortisol levels of these children often exhibit a flattened diurnal pattern where the AM levels are low, and there is little change from AM to PM values. Further studies have suggested that therapeutic interventions and changes in environment may have the potential to reverse these abnormal cortisol cycles. This study looks at the question of whether therapeutic family-based intervention in foster preschoolers would lead to more typical diurnal cortisol patterns compared to preschoolers in regular foster care.

Foster preschoolers recruited for the study were randomly assigned either to an intervention group, which received family-based supportive care, or to a regular foster-care group. In addition there was another comparison group of non-maltreated children drawn from the same community. Early morning and evening salivary cortisol samples were gathered on 2 consecutive days for 12 months, and assayed using the High Sensitivity Salivary Cortisol EIA kit from Salimetrics.

Counter to expectations, initial AM cortisol levels for both groups of foster children were not unusually low—presumably because none had experienced the type of severe neglect reported in other studies. AM cortisol levels (and the mean difference between AM and PM levels) for the intervention group also did not increase over the course of the study, and they remained similar to levels in the non-maltreated children. What was notable, however, was that the AM cortisol levels for the comparison group of children in normal foster care dropped over the course of the study, and as a consequence the flattened diurnal cycles associated with adversity were observed. The authors therefore conclude that family-based intervention does appear to have some ability to affect cortisol activity, in this case by preventing the development of the abnormal cortisol cycle seen under ordinary foster care.