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Restricting environmental stimulation influences levels and variability of plasma cortisol.

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Restricting stimulation from the environment has been shown to alter psychological and physiological states. The present study of 27 healthy subjects examines the effects of restricted environmental stimulation technique (REST) on plasma levels of cortisol and variability in plasma cortisol levels across repeated REST sessions. The REST environment consisted of a 1.2 X 1.2 X 2.4-m ovoid chamber containing 25 cm of saturated MgSO4 solution (sp gr 1.28) maintained at 34.5 degrees F. The buoyant supinely floating subject experienced a minimum of light, sound, and temperature awareness and spatial orientation. The non-REST environment was a cushioned reclining chair in a quiet dimly lit room. The 5-wk protocol consisted of four visits for blood sampling during a 2-wk baseline followed by eight REST or non-REST sessions, 40 min each, with blood samples taken on four nonsession days between sessions 5 and 8. Variability in plasma cortisol was expressed in terms of standard deviation. REST was associated with across-session decreases of 21.6% in plasma cortisol and 50.5% in plasma cortisol variability, whereas no changes in these measures occurred in non-REST. It is concluded that REST influences both static and dynamic aspects of adrenocortical function, possibly altering the feedback monitoring of plasma cortisol.

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