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Plasma Cortisol Changes During Hypnotic Trance Relation to Depth of Hypnosis

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Abstract

THIS paper will report on some of the psychological concomitants of an endocrine phenomenon which we have observed following prolonged hypnotic trance states in certain subjects. The endocrine change is a drop in the level of plasma cortisol to unusually low levels after 90 minutes of passive, relaxing hypnotic trance.

Plasma cortisol—or hydrocortisone, or 17-hydroxycorticosteroids—has been used by psychophysicologists as an index of pituitary-adrenal cortical activity, and elevations in plasma cortisol concentration are a characteristic part of the organism's response to psychological stress.¹⁻³ Here, we are focusing on psychological factors possibly involved in lowering cortisol levels

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Plasma Cortisol Changes During Hypnotic Trance

Relation to Depth of Hypnosis

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AND RONALD E. SHOR, PhD, PHILADELPHIA

THIS paper will report on some of the psychological concomitants of an endocrine phenomenon which we have observed following prolonged hypnotic trance states in certain subjects. The endocrine change is a drop in the level of plasma cortisol to unusually low levels after 90 minutes of passive, relaxing hypnotic trance.

Plasma cortisol—or hydrocortisone, or 17-hydroxycorticosteroids—has been used by psychophysicologists as an index of pituitary-adrenal cortical activity, and elevations in plasma cortisol concentration are a characteristic part of the organism's response to psychological stress.¹⁻³ Here, we are focusing on psychological factors possibly involved in lowering cortisol levels.

In a previous study by Sachar et al,⁴ we have observed trance-associated drops in plasma cortisol to the very low levels of 3 μ g/100 cc or below in 5 out of 12 excellent hypnotic subjects, or in 25% of the 24 hypnotic sessions. Such low plasma cortisol concentrations are not specific to hypnosis, since, for example, they may occur normally at night during sleep,^{5,6} and also following the administration of such agents as phenobarbital and ether⁷; we had even

they had viewed 90 minutes of Disney movies.^{8,9} However, we had rarely seen such low concentrations occurring spontaneously during the afternoon; compared with extensive control measurements, these findings were significant beyond the 0.0001 level. We believed these low cortisol levels were of biological significance, representing more than a dispelling of preexperimental anxiety. It was our hypothesis that these low cortisol values were related in some way to depth of hypnosis, but we were unable on psychological grounds to distinguish the "low cortisol" sessions from the others—either by estimates of the degree of relaxation and withdrawal or by analysis of the content of the trance fantasies.

The present experiment was designed (1) to replicate the endocrine phenomenon noted in the previous study and (2) to analyze several components of the hypnotic experience in an effort to determine which ones might be related to the cortisol drops. For the purposes of this analysis we have used a different theoretical framework than the "depth of trance" cited in the previous study.

This is the formulation of Shor.¹⁰ Hyp-

observed them in 2 out of 19 subjects after

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notic depth is defined as being composed of three dimensions which may vary independently of each other. In brief, they are (1) degree of "nonconscious involvement in the hypnotic role"; (2) degree of "trance"; and (3) degree of "archaic" relationship with the hypnotist. In the experiment to be described, we have attempted to assess each of these dimensions separately.

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