



The Muscle Immobility of Depression—The Weightlessness Within

PDF (Size: 628KB) PP. 825-833 DOI: 10.4236/psych.2012.329125

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ABSTRACT

The purpose of the study was to elucidate the role of bioelements in human depression. We studied hair sodium and potassium in 311 adult subjects (188 women and 123 men) in the randomized, prospective, observational study; 192 were controls (83 men and 109 women), and 119 have major unipolar depression (40 men and 79 women). Depression was diagnosed by the DSM-IV criteria, and hair sodium and potassium were analyzed by the inductively coupled plasma atomic emission spectroscopy (ICP AES). In the subgroup of 19 controls and 24 depressed subjects who attempted suicide (the gravest form of major depression), antidiuretic hormone (ADH) was assessed by using the standard laboratory ADH diagnostic kit. Significant gender differences were observed, since men have more hair Na and K than women (Na $p < .01$; K $p < .02$; Chi square test). The depressed subjects also have increased levels of hair Na and K, what indicate the negative balance of these electrolytes, since hair growth is unidirectional ($p < .01$ for both K and Na, Chi square test); ADH values were decreased in the suicidal subgroup ($p < .01$, Chi square test). These results on negative Na and K balance, and decreased ADH in depression, are pattern-identical to those observed in astronauts after the short term Apollo space missions. The question emerges if the observed Earthly metabolic changes of body muscles in depressed subjects are the direct consequence of the muscle inactivity, or the fatigue of depression is mediated by the failure of some hypothetical, gravity dependent muscle mobility brain control "dynamostat" that operates in conjunction with the fluid regulation center that manifest its presence when being weightless in the Space.

KEYWORDS

Depression; Suicide; Hair; Blood; Sodium; Potassium; Vasopressin; Muscle Immobility; Weightlessness

Cite this paper

Momčilović, B., Prejac, J., Višnjević, V., Drmić, S., Mimica, N., Bukovec-Megla, Ž., Brundić, S. & Skalny, A. (2012). The Muscle Immobility of Depression—The Weightlessness Within. *Psychology*, 3, 825-833. doi: 10.4236/psych.2012.329125.

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