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# Comparison of low dose and standard dose adrenocorticotropin stimulation tests in healthy Nigerians.

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African Journal of Medicine and Medical Sciences, 01 Jun 2010, 39(2):113-118

PMID: 21117407

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## Abstract

Hypothalamo-pituitary-adrenal (HPA) axis dysfunction is a potentially life-threatening condition. It is of paramount importance that safe, reliable diagnostic tests be available to identify patients at risk for adrenal insufficiency. The 250 microg Adrenocorticotrophic hormone (ACTH) stimulation test is commonly used to assess adrenocortical function. The 250 microg dose is supraphysiological, therefore several investigators, over the years, have used 1 microg ACTH stimulation test to assess adrenocortical function. The aim of the study was to compare the response of healthy adult Nigerian subjects to the 250 microg and 1 microg ACTH tests. Ten healthy subjects, five males and five females, aged between 20-60 years, (mean, 38.7 years) participated in this study. They all had normal medical histories and physical examinations, were nonsmokers, and had never received any type of glucocorticoid therapy. Serum chemistries, full blood counts, erythrocyte sedimentation rate, were all within normal limits. Both low dose ACTH test and standard dose ACTH test were performed on the 10 subjects in a randomized order on different days. There was no statistically significant difference in mean serum cortisol levels between the two test doses at 30 minutes (928.4 vs 929.8 nmol/L). There was a strong correlation between 30-minute cortisol responses to 1 microg and 250 microg ACTH stimulation tests,  $r = 0.999$ ;  $p < 0.001$ . In agreement with other published data, our study confirms that 1 microg ACTH stimulates adrenocortical secretion in normal subjects in the period 30 minutes post injection comparable to 250 microg ACTH testing.

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