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## ARTICLES

# Racial differences in parathyroid hormone dynamics

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Elevations in PTH levels have been reported in black subjects. Such observations have not been consistent, however, and seem paradoxical in view of the known bone-resorptive action of this hormone and the fact that black subjects have a higher bone mineral density and fewer fractures than their white counterparts. In this study, we used dynamic stimulation of the calcium-PTH axis to fully characterize potential racial differences in PTH dynamics. We, therefore, defined the inverse sigmoidal curve that describes the relationship between serum ionized calcium concentration and intact PTH levels in six normal white and six normal black volunteers and determined the four parameters that characterize this relationship. An elevation in any one of these parameters can result in hyperparathyroidism. Black subjects had higher maximal and minimal PTH responses to hypo- and hypercalcemia (mean intact PTH levels of  $9.2 \pm 1.3$  and  $0.7 \pm 0.1$  pmol/L respectively) than white subjects ( $6.9 \pm 0.6$  and  $0.3 \pm 0.1$  pmol/L, respectively). There were no differences in the set-points or slopes of the curves. Despite the higher baseline and stimulated endogenous PTH levels in black subjects, their baseline and stimulated osteocalcin levels were lower. Our dynamic studies, therefore, document mild hyperparathyroidism in black subjects and suggest mild skeletal resistance to PTH.