

# Altitude, heredity and body proportions in northern Chile

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Recent studies of the effects of hypoxia on human growth and adult size have focused mainly on the variability of single measurements. In this paper we explore changes with altitude and ethnicity (Spanish/Aymara ancestry) in body proportions of permanent residents of an altitudinal gradient (0-4000 meters) in northern Chile. Body proportion or shape is assessed by anthropometric indices and principal components of 14 bone measurements. Ethnicity independent of altitude had its major effect on proportions and a lesser effect on size. Aymara had larger relative sitting heights, broader builds and prominent facial development as compared to non-Aymara (Spanish). Altitude also affected head and chest proportions during growth. On the whole, the effects of altitude and Aymara ancestry on the measurements and indices were independent (not necessarily of similar direction or magnitude), in spite of a correlation of ethnicity and altitude in Andean populations. Copyright © 1979 Wiley-Liss, Inc