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Testosterone, aging, and seasonality among Toba men of northern Argentina
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Abstract:

Originally hunter-gatherers, the Toba of northern Argentina now exhibit a range of subsistence practices. Their environment, diet, and physical activity patterns are considerably seasonal. With the purpose of examining seasonal and age-related changes in testosterone (T) levels, we collected morning and evening saliva samples and anthropometric measures from 153 men ages 12 to 83, in each of three distinct seasons. Data from a subset of $n=48$ men were used for repeated measures analyses. Mean body mass index (BMI) was 24.1 ± 3.3 kg/m² and no statistically significant seasonal differences in body mass were found. Salivary T concentration fell within the range of those found in other non-industrialized populations. No statistically significant associations were found between overall T levels and age ($r = -.16$, $p=.28$), height ($r = 0.04$, $p=.78$), or BMI ($r = -0.08$, $p=.59$). Circadian variation was non-significant as well ($t_{(47)}=0.99$, $p=.32$). T levels showed a seasonal pattern, peaking during the hot, rainy season (140 vs 180 pmol/L, cold vs hot season, $t_{(46)}=3.36$, $p=.002$). Previous demographic and reproductive ecology studies indicated that conceptions and ovarian hormone levels peak during this season as well. Younger men seem to be contributing more to the seasonal difference (age x season interaction effects). We will discuss biosocial effects on T levels, including physical and sexual activity levels across seasons, which appear to support they hypothesis that T regulates energy allocation towards mating effort.