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## **Teotihuacán at Kaminaljuyú? The Evidence from Oxygen Isotopes in Human Bone**

**Research Year:** 1996

**Culture:** Maya

**Chronology:** Middle Pre-Classic to Post Classic

**Location:** Highlands Guatemala

**Site:** Kaminaljuyú

Teotihuacán, in the Valley of México, was the earliest state-level society in the Americas. As such, it appears to have exercised control over much of Mesoamerica, but the nature of its control is still not well understood. One hypothesis is that officials from Teotihuacán may have dwelled at important regional centres, such as Kaminaljuyú, which was the most important Maya site in the Guatemalan highlands at the time. In particular, the tomb architecture and grave goods at Mounds A and B appear to indicate a strong Teotihuacán presence, but whether it is physical or symbolic has been debated.

Based on the assumption that "we are what we drink", oxygen isotope analysis of bone and tooth enamel phosphate offers potential as an ecological means of identifying foreigners in archaeological populations. Enamel phosphate was analysed for oxygen isotope ratios in the first and third molars of 31 individuals from Kaminaljuyú in order to determine the presence of foreigners and to identify the timing of geographic movement within individuals. The timing of movement is based on the age at which the dental enamel forms (6 months to 3 years for first molars and 9 to 12 years for third molars).

The control populations in this study are all isotopically distinct. These include the site of Tlajinga 33 (which represents Teotihuacán), the site of Monte Albán, in the Valley of Oaxaca (which is used as an environmental contrast), and for Kaminaljuyú, non-elite individuals from Middle Preclassic (1000-5000 B.C.) to Postclassic (1000-1500 A.D.) periods. During the Middle Classic period, which is when the greatest degree of Teotihuacán influence is expected to have occurred, there is marked variability in the tomb occupants of Mounds A and B. However, the isotopic data suggest that there was human representation in these mounds from at least two different foreign regions. One of these regions could have been Teotihuacán, the other is yet unidentified, but might be from either the Pacific coast or the Maya lowlands.

Principal tomb occupants were both foreign and local and sacrificed retainers were also both foreign and local. However, none of the principal occupants of tombs in Mound A

appeared to have been born outside Kaminaljuyú, i.e. at Teotihuacán. Nonetheless, a comparison of values from first and third molars suggests a double movement of some individuals e.g. skeleton 1, Tomb A-V, who appears to have been born near Kaminaljuyú and possibly spent his early teenage years at Teotihuacán.

Clearly, it was not just material goods which moved between regions, and the existence of burials from more than one region indicates a complexity of human exchange or movement which mirrors that of material goods. The lack of uniformity in homeland identification for either principal tomb occupants or retainers does not support the hypothesis that Teotihuacán exercised power over foreign polities with a ruling physical presence.

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*Additional information on this topic may be found in: "Testing the Nature of Teotihuacán Imperialism at Kaminaljuyú using Phosphate Oxygen-Isotope Ratios" by Christine D. White, Michael W. Spence, Fred J. Longstaffe, and Kimberley R. Law published in the *Journal of Anthropological Research*, vol. 56, pp. 535-558, 2000.*