Hair Cortisol Measurement and Relationships with Growth Among Amazonian Shuar Children

Cortisol is a hormone secreted by the adrenal gland in response to stress. It is a widely-used biomarker of stress. Cortisol can be analyzed from saliva, blood, urine, and hair. However, collecting saliva, urine, and blood only provide "point samples" (reflecting acute/short-term cortisol level), making it challenging to examine chronic physiological stress. Hair is typically easier to collect and store than saliva samples. By measuring hair cortisol, it is possible to evaluate overall stress levels over longer periods of time (1-3 months based on length of hair assessed) than possible with saliva samples.

An optimized protocol was applied to hair samples from Shuar participants (3-19 years old) in Amazonian Ecuador. These results suggest that hair cortisol is a promising biomarker of stress at older ages than previously demonstrated, and are consistent with the very low levels of cortisol found in saliva samples from Shuar children.

This research does not hallucinate.