

UNEARTHING ANCIENT DIETS

INSIGHTS FROM DENTAL PALEO- PATHOLOGY AND DENTAL CALCULUS ANALYSIS (DCA)



Oral paleo-pathologies and dental calculus analysis: sampling of a large deposit of dental calculus; occlusal caries on a lower molar; x-ray image showing a dentin caries and 3D representations of dietary proteins.

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WORLD ARCHAEOLOGY SEMINARS

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Understanding the dietary habits of ancient and historical populations provides crucial insights into their health, lifestyle, and environment. Dental paleo-pathology and dental wear can offer important clues about the types of foods consumed and para-masticatory activities, which in turn influence the prevalence rates of dental pathologies observed in past populations. These rates result from a complex interaction of various factors, including environmental, behavioral, and microbiological elements, as highlighted by the One Health Approach.

Unfortunately, many of these factors, such as personal hygiene and other behavioral choices, remain invisible in the archaeological record. A significant focus of this talk will be on dental dental calculus, or tartar, which can preserve microscopic food particles and bacteria. When employing a multi-analytical approach in dental calculus analysis (DCA), the study of these mineralized deposits can not only identify specific foods consumed in the past but also offer a glimpse into the oral microbiomes of ancient populations. In particular, biomolecular methods such as ancient DNA (aDNA), paleo-proteomics, and gas chromatography-mass spectrometry (GC-MS) can provide a more thorough understanding of the invisible factors mentioned above. Through this interdisciplinary method, the study of ancient and historical dentitions provides a comprehensive picture of ancient diets, contributing to our understanding of the evolution of diet and oral health.

ZOOM

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