

New perspectives on Diet and Wellbeing at Herculaneum, AD 79.

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THE ARCHAEOLOGICAL CONTEXT

In late August 79 AD, Mount Vesuvius erupted bringing about the obliteration of several Roman settlements in the Gulf of Naples, including Pompeii and Herculaneum.

discovered in the XVIII century, these archaeological sites represent an extraordinary source of information about the everyday life during the Imperial Roman time (Berry, 2007).



Despite the tragedy, since they were

MATERIALS

Recently, over three hundred exceptionally well-preserved skeletons were recovered along the Herculaneum sea-shore and under the boat houses there located. This assemblage represents a unique resource, a rare snapshot of a "living" population destroyed by a catastrophic natural event (Capasso, 2001).

OBJECTIVES

Before the eruption, Mount Vesuvius was flourishing. This and the proximity to the sea provided a wide variety of nourishment to the surrounding cities. Very much is known about Imperial Roman diet in general, thanks to historical evidence and archaeological finds. However, direct evidence of diet is still lacking (Craig et al., 2009).

Our aim is to:

- ✓ For the very first time, **reconstruct the diet and the health status** in the Imperial Roman time from a "living" population.
- ✓ Reveal **how food was distributed** within different individuals.
- ✓ Underline **how diet changed** during an individual lifetime.

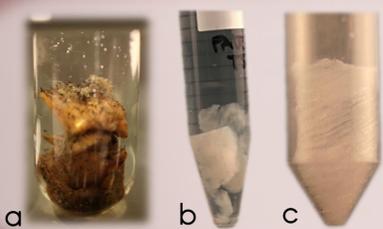
METHODS

Direct information about diet and health status can be gained by directly analysing skeletal materials.

Here we apply:

STABLE ISOTOPE ANALYSIS OF COLLAGEN AMINO ACIDS

Measuring stable isotopes ratio of individual amino acids from bone collagen is useful to reconstruct paleodiets better understanding the contribution of terrestrial and aquatic resources (Webb et al., 2015).



Collagen extraction process:
a) bone demineralisation;
b) bone gelatinisation;
c) extracted collagen.

PROTEOMICS AND DNA ANALYSES OF DENTAL CALCULUS

Dental calculus entraps host cells, bacteria and food micro-remains. These inclusions can be revealed by detecting proteins and DNA fragments (Warinner et al., 2015).

Chunks of dental calculus.



Results obtained from biomolecular analyses are significant only when combined with archaeological and historical evidences.

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