

RESEARCHING ANCIENT AND HISTORIC TUBERCULOSIS:
OSTEOLOGICAL METHODS VERSUS ANCIENT DNA

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Abstract:

While some diseases have only recently begun infecting humans, frequently through zoonosis, many diseases have co-evolved with humans for thousands of years. One such disease is tuberculosis, which has long been a part of human populations and continues to be a leading cause of death. Understanding the history and evolution of tuberculosis is important for understanding modern epidemics and for eventually developing a cure. Tuberculosis is a primarily airborne bacterium that commonly infects the lungs, although the bacteria can spread to other parts of the body via the blood and lymphatic system. In a minority of cases, this extra-pulmonary tuberculosis infects the skeletal systems, and this allows for historic incidences to be studied.

Tuberculosis is one of most frequently studied diseases in archaeology and was one of the first diseases to be looked at through ancient DNA (aDNA) analysis. I examine two different methods to approaching TB analysis in past populations: osteology and aDNA analysis. I analyze the viability of both methods, and assess which is most feasible for different situations. I conclude that the identification of the disease in past populations can be performed effectively by either method, but studies currently seem to use only osteology or osteology and aDNA analysis. Further research should be undertaken to ascertain if aDNA can be used as a standalone methodology for disease research, as this would be beneficial for future studies of tuberculosis.