

Analysis of Ancient Bone DNA Samples From Excavations at St Peter's Burial Ground, Blackburn

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Abstract : In summer 2015 the remains of 800 children are among 1,967 bodies were exhumed by archaeologists at St Peter's Burial Ground in Blackburn, Lancashire. One hundred samples from these 19th century ancient bones were selected for DNA analysis. These comprised samples biased for those which prior osteological evidence indicated a potential for microbial infection by *Mycobacterium tuberculosis* (causing tuberculosis, TB) or *Treponema pallidum* (causing Syphilis) species, as well a random selection of other bones for which visual inspection suggested good preservation (and, therefore, likely DNA retrieval). They were subject to polymerase chain reaction (PCR) assays aimed at detecting traces of DNA from infecting mycobacteria, with the purpose both of confirming the palaeopathological diagnosis of tuberculosis and determining in individual cases whether disease and death was due to *M. tuberculosis* or other reasons. Our secondary goal was to determine sex determination and age prediction. The results demonstrated that extraction of vast majority ancient bones DNA samples succeeded.

Keywords : ancient bone, DNA, tuberculosis, age prediction

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