

Human Osteology at Wharram Percy

Life and death in a medieval village

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Scientific study of human skeletal remains from the deserted village of Wharram Percy sheds new light on disease, diet and death in a rural medieval community.

The deserted medieval village at Wharram Percy, in the Yorkshire Wolds, was the subject of one of the longest-running archaeological excavations in Britain (1950–90), led by Maurice Beresford and the late John Hurst. Part of the fieldwork focused on the churchyard, and this was the first excavation of a sizeable collection of human skeletons from an English medieval rural site. The scientific work on the remains is being coordinated from the Ancient Monuments Laboratory at English Heritage's Centre for Archaeology, Portsmouth, and many workers in Britain and abroad have collaborated with English Heritage on research using the skeletons. The application of the latest scientific techniques has allowed fresh insights into medieval rural life.

Infant mortality

About 15 per cent of the skeletons were infants. This suggests that infant mortality levels may have been fairly low for an early population where figures may be as high as 40 per cent. Insight into infant feeding practices was provided by analysis of nitrogen stable isotope ratios in the bones. Breastmilk contains a high level of nitrogen-15, permitting duration of breastfeeding to be investigated. Results indicated that infants were usually breastfed until they were about 18 months old. Breastfeeding builds the infant's immune system and prevents early contact with potentially contaminated foods. It may well be that the extended breastfeeding practiced by the Wharram Percy women played a part in the fairly low levels (for that time) of infant mortality.

Growth during childhood

The children's problems began once breastfeeding ceased. By two years of age, they had started to fall behind modern children in their growth, and, by later childhood their growth was greatly retarded. A Wharram Percy 14-year-old child, for example, was only about the same height as a modern 10-year-old, and comparison with 19th-century figures shows that the medieval children were no taller than factory children in the Industrial Revolution. This suggests that childhood health and nutrition were no better than that of 19th-century slum-dwellers. Despite this problem, the average height of the adults (5'6" for men, 5'2" for women) was only a few inches shy of modern figures. This is probably due to prolongation of growth – in the past, people continued to grow well into their 20s rather than growth ceasing in the late teens as now.



Sacrum and right pelvic bone from a Wharram Percy burial. The lowest lumbar vertebra is fused to the sacrum. There is a large hole in the vertebral body leading to an abscess cavity within. Spinal abscesses are typical of tuberculosis. There is some new bone formation on the sacrum, probably as a response to pus exuded from the abscess. Analysis of bone samples revealed DNA from tubercle bacilli, confirming the diagnosis of tuberculosis.

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Part of the churchyard at Wharram Percy under excavation.

Osteoporosis

Approximately 40 per cent of adult burials were of individuals over 50 years old. This shows that even in this rather poor settlement, life expectancy was reasonable once adulthood had been attained. Indeed, many manifested evidence of diseases which afflict the elderly today. For example, the loss of bone density due to osteoporosis was no less than that seen nowadays. This finding is an example of how studies of ancient bones have relevance for modern medicine. It has often been held that many aspects of modern lifestyles, such as cigarette smoking and sedentary habits, exacerbate loss of bone density in osteoporosis. The finding that osteoporosis was just as severe among the non-smoking, physically active peasants at Wharram Percy as it is in modern populations leads one to question the



A femur from a Wharram Percy burial, showing a porous deposit of new bone. This is a typical bony response to infection, although which particular disease was the cause cannot be determined. Such lesions are less frequent at Wharram Percy than among burials from medieval York.

importance of lifestyle factors in influencing the disease.

Seafood in diet

The bone data provides evidence for trading and other links between Wharram Percy and surrounding settlements. The stable isotope analyses played a role here. Consumption of seafood can be detected using this technique, and analyses revealed that marine fish were a minor but significant source of dietary protein. Seafood may have been acquired direct from coastal settlements or via trade with inland market towns.

Disease

Regular links between Wharram Percy and larger settlements may have affected the disease experience of the community. Evidence for tuberculosis was found among the skeletons. There are two forms of tuberculosis, one acquired from animals (particularly cattle) and one transmitted human-to-human. DNA analysis of skeletons showing tuberculosis indicated that the Wharram Percy people suffered from the human type. As this type thrives in large, crowded settlements it may be that regular contact with large urban centres helped maintain the disease, even in rather thinly populated countryside.

Notwithstanding the evidence for regular contact between town and country, there were some differences in health between the Wharram Percy population and those from nearby towns. For example, despite the evidence for tuberculosis, in general, infectious disease was less often seen on the Wharram Percy bones than was the case in a coeval skeletal series from York. This is consistent with the idea that rural populations had generally fewer infectious diseases than those from crowded, insanitary urban centres.

New research

The Wharram Percy skeletal collection continues to attract researchers from around the world. A number of projects are currently being conducted, including investigation of the effects of peasant labour on health using analyses of spinal and other joint injuries, a study of diet using chemical analysis of mineralised dental plaque found on the teeth, and further studies of osteoporosis. Most of these are being carried out as collaborative work between English Heritage and other research institutions.