Highs and lows of an Englishman's average height over 2000 years

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Credit: Charles Parker from Pexels

Researchers have used data on skeletal remains to calculate how the average height of Englishmen rose or fell over 2,000 years of history. They reasoned that height, which is linked with childhood nutrition, is a

good alternative measure of wellbeing and can be estimated accurately from the length of a full grown man's femur.

Using data of skeletal remains of men aged between 21 and 49 years from a range of archaeological excavations conducted in different parts of England during the last 30 years, they reconstructed an individual's full height from data recording the length of their femur. Biologists and epidemiologists have long recognised that although the main causes of variation in individual height may be genetic, changes in the economic, social and environmental circumstances are reflected in the mean heights of different groups of people at any given time.

Their working paper reveals that Englishmen became taller when Britain was under Roman occupation (200-410 AD), with average height rising from 167 cm to 170 cm (or 5 feet 7 inches). The researchers suggest this rise in average height coincided with the Romans' improved water supply and sanitation systems and a more varied diet at this time. After the Romans left Britain in 410, heights did not decline immediately but fell from 600 AD. The paper highlights previous research, suggesting health may have deteriorated when populations moved out of the towns and cities set up by the Romans, abandoning the more hygienic water supplies and waste disposal systems. Plague and pestilence then became common and infectious diseases were on the increase at this time, with archaeological evidence also suggesting that diets were inadequate, notes the paper.

Average heights of men started to go up again after the Norman Conquest of 1066, says the paper. By the end of the early medieval period, heights had increased to 172 cm, increasing to 173 cm in the 1100s, edging closer to heights achieved at the start of the 20th century. The paper suggests that a warmer climate may have contributed to good general health among the population, noting that records for 901 until 1100s show that England 'saw the warmest weather of the millennium".

Over this period of 200 years, average heights increased by more than 5 cm, says the paper.

After 1200, men became shorter in stature, and archaeological evidence shows that at this time, rural populations were decreasing, farmland had become degraded and there were shortages of crop seeds. The paper also notes that other research suggests temperatures turned colder over the century, with weather becoming far more changeable until the early 1300s. The Great Famine (1315-1317) may have exaggerated the decline in average heights, but the paper says men's height had started to decline several decades before. After the Black Death of 1348-1350, however, average heights grew, with the paper noting that this coincided with a boost in agricultural production. From 1400 to the early 1650, mean height reached 173-174 cm. The early years of the 1600s were 'unusually healthy', and the paper notes that the introduction of poor laws may have contributed to better health for poorer sections of society.

Heights fell after 1650, reaching just 169 cm in the late 1600s, a decline that continued until the early 1800s, says the study. It notes that previous research suggests mortality rates had declined with life expectancy for those born between 1650-1750 being 35 years as compared with 40 years in the late 1500s. The nature of work after 1650 had changed with manual labour putting more of a toll on the body. The authors note that during the Industrial Revolution, the demands on workers were much greater than in medieval times. The increasing number of working days coupled with poorer working conditions could be why average height went down even though wages grew after 1650. The decline in heights could also be associated with increasing inequalities in society, suggests the paper.

The study compares the average heights of Englishmen with similar work previously carried out by Richard Steckel of Ohio State University, who created a European health index. Although the European and the

English evidence provide a consistent history, the Oxford-led study shows that the English may have escaped the worst of a Little Ice Age, a period of cooling that occurred after the medieval warm period, where the health effects were more marked across continental Europe.

Lead author Dr Gregori Galofré-Vilà, from the Department of Sociology at the University of Oxford, said: "We believe our results shed new light on the development of health in England over the very long run. Since the early 19th century, average heights for Englishmen have increased substantially, reaching 175 cm in 1950 and 177cm in 1970, being among the tallest of any population worldwide. Our data shows that average heights in England in the medieval era and between 1400 and 1700 were similar to those of the 20th century. If mean heights are a good measure of well-being, it seems we are now in previously uncharted territory. Within the last 100 years, the average heights of Englishmen have risen more than at any time in recorded history."

Provided by University of Oxford

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