

Publication

4000 years of human dietary evolution in central Germany, from the first farmers to the first elites

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Investigation of human diet during the Neolithic has often been limited to a few archaeological cultures or single sites. In order to provide insight into the development of human food consumption and husbandry strategies, our study explores bone collagen carbon and nitrogen isotope data from 466 human and 105 faunal individuals from 26 sites in central Germany. It is the most extensive data set to date from an enclosed geographic microregion, covering 4,000 years of agricultural history from the Early Neolithic to the Early Bronze Age. The animal data show that a variety of pastures and dietary resources were explored, but that these changed remarkably little over time. In the human $\delta^{15}\text{N}$ however we found a significant increase with time across the different archaeological cultures. This trend could be observed in all time periods and archaeological cultures (Bell Beaker phenomenon excluded), even on continuously populated sites. Since there was no such trend in faunal isotope values, we were able largely to exclude manuring as the cause of this effect. Based on the rich interdisciplinary data from this region and archaeological period we can argue that meat consumption increased with the increasing duration of farming subsistence. In $\delta^{13}\text{C}$, we could not observe any clear increasing or decreasing trends during the archaeological time periods, either for humans or for animals, which would have suggested significant changes in the environment and landscape use. We discovered sex-related dietary differences, with males of all archaeological periods having higher $\delta^{15}\text{N}$ values than females, and an age-related increasing consumption of animal protein. An initial decrease of $\delta^{15}\text{N}$ -values at the age of 1-2 years reveals partial weaning, while complete weaning took place at the age of 3-4 years.

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