

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/19045> holds various files of this Leiden University dissertation.

**Author:** Oelze, Viktoria Martha

**Title:** Mobility and diet in Neolithic, Bronze Age and Iron Age Germany : evidence from multiple isotope analysis

**Issue Date:** 2012-06-06

## 12. Summary

Prehistoric human diet can be reconstructed by the analysis of carbon (C), nitrogen (N) and sulphur (S) stable isotopes in bone, whereas ancient mobility and provenance can be studied using the isotopes of strontium (Sr) and oxygen (O) in tooth enamel, and of sulphur in bone. Although thirty years have passed since the first application of the stable isotope method to European skeletal material, gaps in biochemical research have remained within German archaeology. This dissertation seeks to fill these gaps by providing novel evidence from multiple isotope analyses in different transitional periods of German prehistory, including the earliest Neolithic farmers of the *Linearbandkeramik* culture, the Early Bronze Age necropolis site of Singen, and the elite burial population from the Early Iron Age site of Magdalenenberg. To assess the local characteristics of Sr isotopes in south-western Germany, environmental samples (n=93) were collected and analysed from the different geological formations between the Black Forest and Lake Constance. As a result of this work, these reference data are now available for future research.

A substantial dataset of C and N isotopes was obtained from the human populations from the *Linearbandkeramik* sites of Derenburg, Halberstadt and Karsdorf (n=97) in Central Germany. The data provides information on early Neolithic subsistence and individual diet, and can be connected to evidence from a previous palaeogenetic study on lactose intolerance. Furthermore, the analysis of contemporary fauna (n=45) provides novel evidence on Neolithic livestock management strategies. The reconstruction of ancient mobility using the isotopes of Sr, O and S provided information on human provenance at the Early Bronze Age cemetery site of Singen. While the population had been considered mobile because of exotic grave goods found at the site, biochemical evidence suggests all sampled individuals (n=29) originated and lived locally in the region of Lake Constance. A very distinct pattern was found at the Early Iron Age monumental tumulus site of Magdalenenberg in the Black Forest. The results of Sr, O and S analyses in the skeletal remains (n=90) of this elite Hallstatt Culture burial population suggest various regions of human origin. Only a small proportion of the people originated locally. The majority of the burial population is derived from the Black Forest highlands or from the plains towards Lake Constance. In some cases, individual origin could be assigned to specific areas in the Alps and Italy through the application of various isotope systems.