1. Introduction

The introduction of sedentary life and farming entailing a major change of lifestyle marks the beginning of the Neolithic. Genetic studies propose different migration waves in the Late Neolithic period. However, it is uncertain how the new influences changed the populations and what led to these migration waves. Human remains from the time between those events provide the possibility to study the population dynamics shaping contemporary Europe. However, Neolithic burials are rare in Switzerland and little is known about the populations’ state of health, social stratigraphy, and diet. Thus, the recent discovery of a dolmen with multiple burials in Oberbipp might provide new information. The aim of the project is to obtain biological data regarding the population by analysing the bones morphologically and biochemically, for example via radiocarbon dating, stable isotope ratios and ancient DNA.

2. Materials and Methods

Skeletal remains from the Oberbipp dolmen (3300-3000 BCE) and from 13 other Neolithic sites (fig.1) were investigated by means of:

- Morphological analysis [1,2] to establish biological profiles and the minimal number of individuals (MNI)
- Stable isotope ratios of δ¹³C, δ¹⁵N, δ³⁴S, δ³⁰H, δ¹⁸O to reconstruct dietary and migration patterns [3,4]
- Ancient DNA analysis for population genomics and kinship analysis
- Radiocarbon dating to establish the relations within one burial site and between the different sites
- For all biochemical analyses unilateral pars petrosa are sampled to ensure that each dataset belongs to one and the same individual (fig. 2)

3. Results

- Based on right femora the MNI is 40 for the Oberbipp dolmen
- The age estimation shows the presence of all age classes (fig. 3)
- Pathological changes such as trauma or degenerative alterations can be found on approx. 40 bones
- Ancient DNA shows, that 63% of the individuals have haplogroup K, more specific 45% have haplogroup K1a+195

4. Conclusion

- The morphological analyses indicate a "normal" demographic distribution in the dolmen, including infants, which are widely missing in other sites (fig. 1) [5,6]
- Lesions typical for lethal interpersonal conflicts were not observed, but signs for healing, inflammations and unspecific deficiency symptoms were present
- First stable isotope ratios show relative negative δ¹³C values. Hence, a regular consumption of C4-plants, such as millet, is not assumed for the Oberbipp population
- The aDNA data can be traced back to a migration wave around 5500 BCE via principal component analysis [7]
- By the end of the project a comprehensive dataset of morphological and biochemical information will be available for the Neolithic population from Switzerland