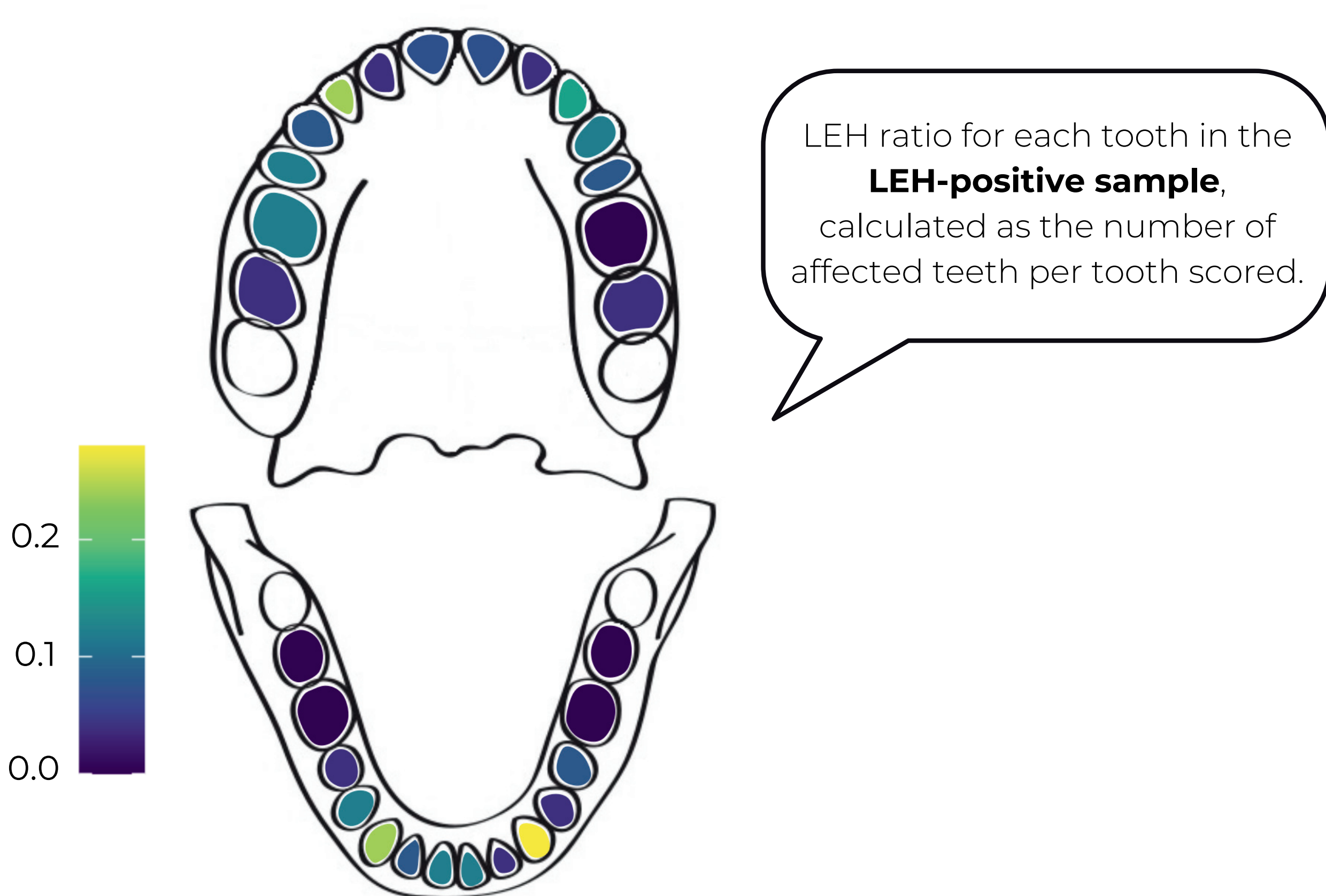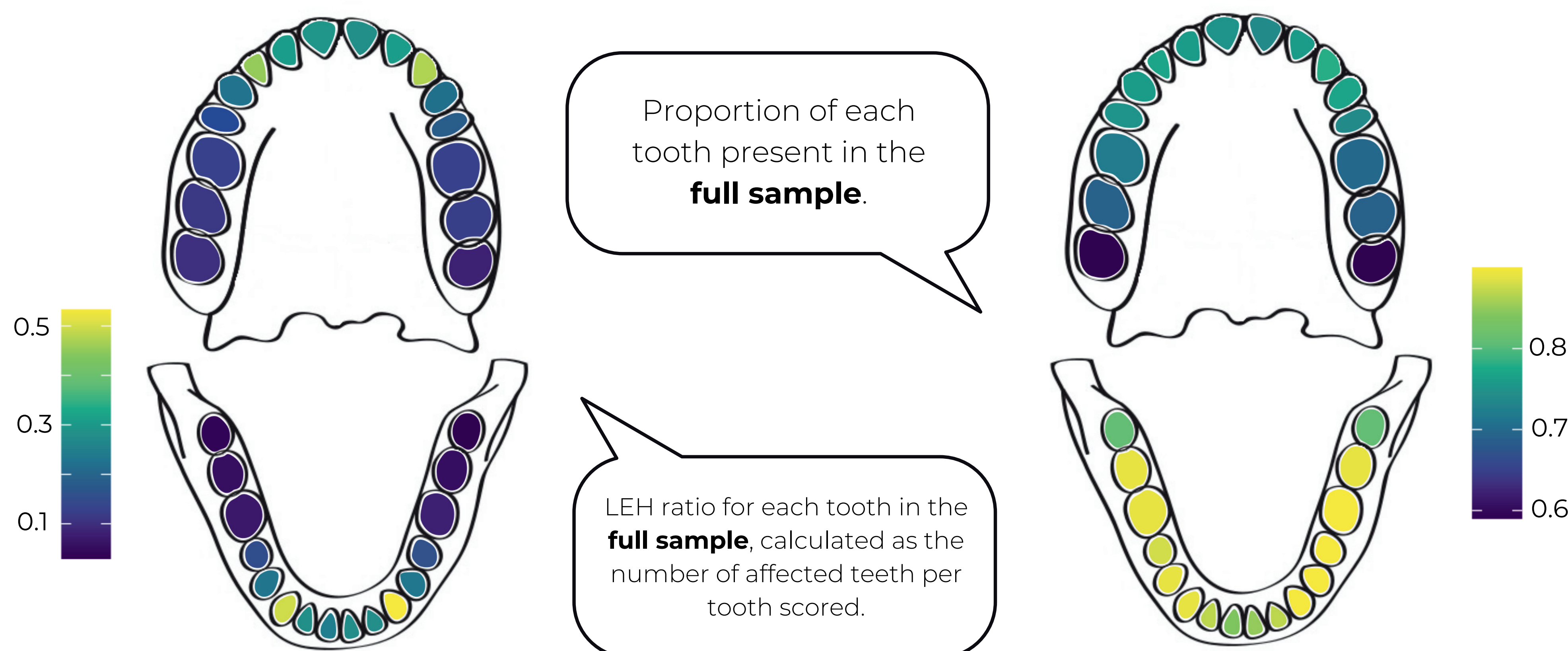# Patterns of Linear Enamel Hypoplasia
Limitations and Recommendations for Analysis

Aims

Exploring patterns of missing teeth and linear enamel hypoplasia (LEH) lesions in the Wellcome Osteoarchaeological Research Database (WORD)

- How do missing data affect LEH scores and interpretations?
- Which teeth are more prone to LEH?
- Can antimeres and/or isomeres confidently be substituted for each other?

Proportion of each tooth present in the **full sample**.

LEH ratio for each tooth in the **full sample**, calculated as the number of affected teeth per tooth scored.

LEH ratio for each tooth in the **LEH-positive sample**, calculated as the number of affected teeth per tooth scored.

Filtering the WORD Medieval and Postmedieval skeletal collections (n = 3457)

1650
Adults with permanent dentition only
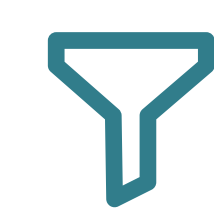
1418
Individuals with LEH scores: **full sample**

643
Complete dentitions (excl. M3s)

25
LEH scores (both present and absent) on complete dentitions

16
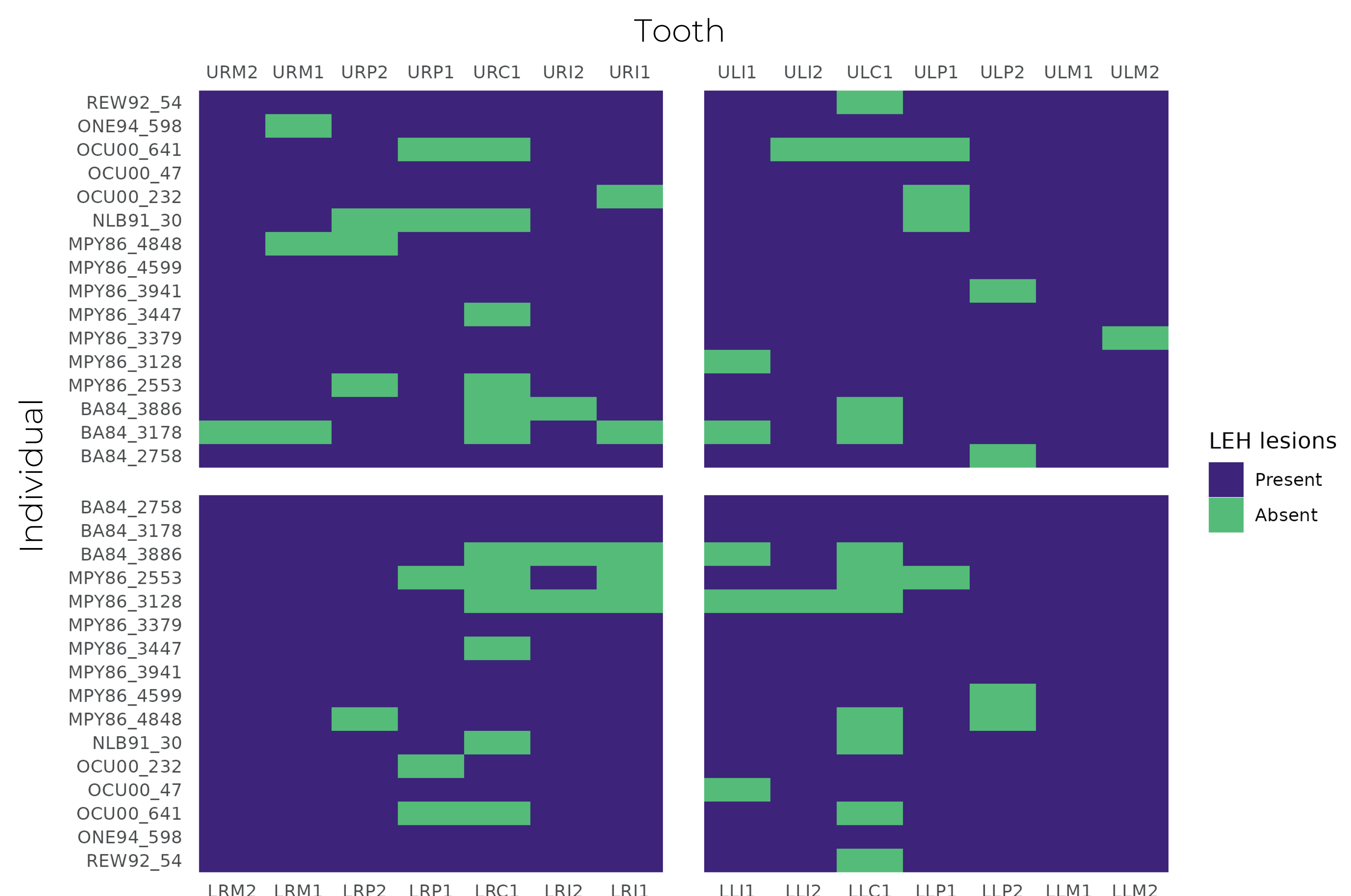Have at least one lesion present: **LEH-positive sample**

Key Results

- 1248 different missing tooth patterns
- 573 different patterns of scoreable teeth in the complete dentitions
- 15 different LEH patterns in LEH-positive individuals
- LEH were completely absent on three of four molars of LEH-positive individuals
- Left lower canines have the highest prevalence of LEH with 44% in LEH-positive individuals
- Canines have the highest prevalence of LEH in tooth types with 36% in LEH-positive individuals
- No tooth showed consistency with its isomere and antimere across all individuals

Key Takeaways

- No single tooth, tooth type, nor tooth class is representative of an individual
- Anterior teeth, especially canines, are most representative
- Posterior teeth, especially molars are least representative
- Don't assume you can substitute isomeres and antimeres
- Use the teeth that you have and be aware of the limitations

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Presence/absence of lesions per individual in each quadrant of the dentition in the **LEH-positive sample**. Y-axis is mirrored between upper and lower plots.

LEH lesions
Present
Absent