The impact of caries experience in primary molars on the emergence of their successors.

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Objectives: In the literature there is no consensus on the influence of a history of caries in the primary dentition on the emergence of the permanent dentition. The aim of the present study was twofold: 1) to analyze whether the emergence of the successors of deciduous molars with a history of caries was delayed or advanced and 2) to evaluate whether the successors of primary molars extracted due to caries emerge at an earlier or later age.

Methods: For this purpose data available from the Signal Tandmobiel® project were used. In this longitudinal epidemiological survey data were collected from a representative sample of 4468 children (born in 1989), examined yearly (between 7 and 12 years of age) by trained dentist-examiners. Caries experience and tooth emergence were recorded by direct inspection. Log-logistic survival analyses were performed to calculate median emergence ages.

Results: 56% of all examined primary molars were sound (i.e. dmft=0). Between 2.5 and 7.2% of the first and second primary molars were extracted due to caries; the prevalence of extractions was higher in the mandible compared to the maxilla. The analysis indicated significantly later emergence ages for premolars with sound primary predecessors. The observed differences ranged between 2.4 and 4.8 months in girls and between 3.6 and 8.4 months in boys. In the maxilla, the emergence of premolars replacing deciduous molars extracted due to caries, was advanced significantly (p<0.0001); for the mandibular premolars no significant differences could be observed.

Conclusion: We can state that a history of caries in the primary molars is associated with an advanced emergence of the permanent successors.

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