

Incidence and progression of caries experience in Germany: results of the 6th German Oral Health Study (DMS • 6). Online Appendix

AUTHORS

Schiffner, Ulrich, Prof Dr med dent
Zimmermann, Fabian, MA
Kuhr, Kathrin, Dr rer medic
Meyer-Lueckel, Hendrik, Prof Dr med dent, MPH
Bekes, Katrin, Prof Dr med dent, MME
Jordan, A. Rainer, Prof Dr med dent, MSc

ABSTRACT

Objectives: Longitudinal evidence on individual-level changes in caries experience across the life course in Germany is lacking. Therefore, one objective of the 6th German Oral Health Study (DMS • 6) was to reexamine participants of the Fifth German Oral Health Study (DMS V) after 9 years, to assess changes in the caries burden during the life course.

Method and Materials: The caries experience, including decayed, missing, filled teeth (DMFT), and root caries, was assessed at baseline (2014) and follow-up (2023) in three age groups of the DMS • 6 cohort. The sample comprised 371 adolescents (20-year-olds at follow-up), 342 adults (43- to 52-year-olds at follow-up), and 350 seniors (73- to 82-year-olds at follow-up). Mean changes in caries experience and participant-level caries incidence and progression were calculated.

Results: Mean DMFT increased from 0.4 to 1.8 in adolescents, from 10.7 to 11.8 in adults, and from 16.1 to 18.5 in seniors. Furthermore, the proportion of caries-free adolescents reduced from 81.7% to 47.7%. The cumulative caries incidence in adolescents who were caries-free at baseline was 43.2%. Cumulative caries progression (at least one additional DMF tooth) was observed in 54.1%, 58.4%, and 77.0% of adolescents, adults, and seniors, respectively. Regarding the tooth surface level, 98.3%, 91.1%, and 77.5% of tooth surfaces remained sound throughout the observation period in adolescents, adults, and seniors, respectively. The prevalence of root caries markedly increased from 11.1% to 30.7% in adults and from 32.9% to 61.1% in seniors.

Conclusion: This 9-year longitudinal study demonstrated caries increments during the life course in all three age groups. Adolescents predominantly presented with newly filled teeth, adults showed increased numbers of filled and missing teeth, and seniors primarily presented with a larger number of extracted teeth. Individuals with early caries experience exhibited greater increments. The pronounced increase in root caries among adults and seniors highlights the need to intensify targeted root-surface-focused prevention alongside ongoing primary prevention for high-risk groups.

KEYWORDS: cohort studies, dental care, dental caries, dental health surveys, dentists, disease progression, DMF index, DMS 6, epidemiology, Germany, incidence, oral health, root caries

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Appendix 1

Table A1: Distribution of tooth surfaces with incident caries experience in the adolescent, adult, and senior cohort

	Adolescents	Adults	Seniors
No. of tooth surfaces with incident caries experience (n)¹	504	2,637	3,117
Approximal	150 (29.8%)	1,092 (41.4%)	1,675 (53.7%)
Oral/buccal	100 (19.8%)	1,178 (44.7%)	1,675 (53.7%)
Occlusal	254 (50.4%)	367 (13.9%)	274 (8.8%)

Data are presented as numbers (n) and percentages based on unweighted data for tooth surfaces that were sound at baseline.

¹sound at baseline; decayed or filled at follow-up

AUTHORS

Prof Dr med dent Ulrich Schiffner	Department of Periodontics, Preventive and Restorative Dentistry, Center for Dental and Oral Medicine, University Medical Center Hamburg-Eppendorf, Hamburg, Germany
Fabian Zimmermann, MA	Institut der Deutschen Zahnärzte (IDZ), Cologne, Germany
Dr rer medic Kathrin Kuhr	Institut der Deutschen Zahnärzte (IDZ), Cologne, Germany
Prof Dr med dent Hendrik Meyer-Lueckel, MPH	Department for Operative, Preventive and Pediatric Dentistry, zmk bern, University of Bern, Bern, Switzerland
Prof Dr med dent Katrin Bekes, MME	Department of Peadiatric Dentistry, University Clinic of Dentistry, Medical University of Vienna, Vienna, Austria
Prof Dr med dent A. Rainer Jordan, MSc	Institut der Deutschen Zahnärzte (IDZ), Cologne, Germany

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EDITORIAL OFFICE

Prof. Dr. A. Rainer Jordan
Institute Of German Dentists
Universitätsstraße 73
50931 Cologne

Phone: +49 221 4001-142

Fax: +49 221 4001-152

Web: www.idz.institute

E-Mail: dms6@idz-institute

