

Additional file 7. Distribution of predictors by Level and category in multivariable developmental models of coronal caries increment. Predictors included in final models highlighted in red.	
<i>SOCIETAL STRUCTURAL LEVEL</i>	<i>Predictor</i>
Demography	[7] residence
Parents' education	[2–M1, M2] parents' education ; [3] education household head [4–M1-M11] caregiver's education (high school vs college degree), caregiver's education (post high school vs college degree), caregiver has difficulty in understanding information from health care professional, caregiver has difficulty in communicating with health care professional, [5–M1,M2] father ; [7] education of caregiver
Family income	[7] family income
Parents' oral health	[4–M1-M11] caregiver has caries
Parents' view of child's health	[4–M1-M10] caregiver does not consider child's oral health to be very good ; [5–M5] tooth worm, bedtime milk, child's dental status according to parents
Family structure	[2–M2] family structure ; [3] number of other children living in the household [7] one-child family
Referral system in oral health care	[3] referral caries score ; [4–M3, M9, M10, M11] caregiver received referral for child , [4–M1-M11] caregiver followed up referral; caregiver took referral to the dentist
Fluoridated community	[5–M3] never lived in non-fluoridated community
School	[6] school
Dental Clinic	[6] dental clinic
<i>LIFE-STYLE SITUATIONAL LEVEL</i>	<i>Predictor</i>
Fluoride supplements	[2–M2, 6] fluoride supplements ; [3] F-rinse; [4–M1-M11] uses more toothpaste; no use of additional fluoride at home regular; professional fluoride; occasional professional fluoride; [5–M2, M5] using fluoride
Food intake frequency	[3] snacks between-meals ; [4–M3] soda between meals ; [5–M1, M3] sweets between meals [5–M2, M3] bedtime feeding; bedtime sweets; [6] diet frequency [4–M3] child soda between meals ; [4–M1-11] child drinks water; child drinks tap water vs. well water; child drinks tap water vs. bottled water; no drinks of juice between meals; use of snacks between meals; use of sugar-containing gum; sweet drinks between meals >2 x/day vs. never; sweet drinks between meals >2 x/day vs. 1 x/day sweet drinks between meals >2 x/day vs. 2 x/day; use of snacks between meals >2 x/day vs. never; use of snacks between meals >2 x/day vs. 1 x/day; use of snacks between meals >2 x/day vs. 2 x/day; use of sugar-containing gum > 2 x/day vs. never; use of sugar-containing gum > 2 x/day vs. 1 x/day; use of sugar-containing gum > 2 x/day vs. 2 x/day
Oral hygiene routines	[3] tooth brushing ; [4–M1-M11] brushes less twice a day; [7] frequency of tooth brushing
Dental attendance	[3] household head number of dental visit in past year, number of times child visited dentist in past year, reason for dental visit; [4–M1, M2, M3, M6, M7, M8] child has been to the dentist in past 3 months vs 6 months ; [5–M2] annual dental checks
Infant feeding	[5–M1, M2, M3, M4] months of breastfeeding
Diet content (lbc in saliva)	[6] diet content (lbc in saliva)

PHYSIOLOGICAL LEVEL	Predictor
Age	[3] age; [4–M1-M11] age; [5–M1-M5] age
Ethnicity	[3] race, [5–M1, M5] race
General health	[3] ear infection history, strep throat history, antibiotics in past 60 days; [4–M1-M11] child not covered under health care reforms; [5–M1, M2] no health problems; [6] related disease
Sex	[2–M1, M2] sex; [3, 8] gender; [4–M1-M11] female; [6, 7] sex
ORAL BIOLOGICAL LEVEL	Predictor
Mutans streptococci (ms) in saliva	[1] ms in saliva; [2–M1] ms in saliva; [3] ms in saliva; [5–M2, M4] ms in saliva; [6] ms in saliva
Lactobacilli (lbc) in saliva	[1] lbc in saliva; [2–M1] lbc in saliva; [3] lbc in saliva; [5–M2, M4] lbc in saliva
ms and lbc in dental plaque	[8] ms and lbc in dental plaque
Visible dental plaque	[2–M1] debris index; [3] plaque score; [5–M1, M2, M3, M4] plaque index; [6] plaque amount; [7] plaque index
Acid production salivary bacteria	[8] acid production salivary bacteria
Saliva secretion	[6] saliva secretion; [8] salivary flow rate
Saliva buffer	[2–M1, M2] saliva buffer; [5–M2, M4] pH; [6] saliva buffer
Cariostate score	[7] cariostate score
TOOTH LEVEL	Predictor
Number of teeth	[8] number of teeth
Tooth morphology	[3] tooth morphology; [8] fissure morphology
Fluorosis	[3] fluorosis
Sound permanent tooth surfaces	[3] sound permanent tooth surfaces
Sealants	[3] sealants
Genetic markers for enamel and Water channel protein	[7] rs3790506, rs1996315, rs10779570, rs11003125, rs1126478, rs11362, rs12640848, rs13115627, rs134143, rs1612069, rs17640579, rs1784418, rs1800450, rs1800972, rs2097470, rs2274327, rs35874116, rs3796703, rs457741, rs713598, rs923911, rs946252, rs9701796
CARIES EXPERIENCE	Predictor
Cavitation	[6] DMFT; [7] ICDAS 3-6; [5–M1, M2] dmft; [2–M1] dmfs; [3] dmfs; [4–M2, M7, M10] ICDAS≥3 at end; [4–M3, M5, M8, M11] ICDAS≥3 at start; [8] dmfs; [3] DMFS; [4–M2, M10] ICDAS≥3 at end; [4–M3, M5, M8, M11] ICDAS≥3 at start; [8] DMFS; [1] DS; [4–M9, M10, M11] current caries; [4–M6, M7, M8, M9, M10, M11] tooth restored; [4–M1, M2, M3] tooth extracted + tooth restored; [4–M4, M5] tooth extracted
White spot lesion	[3] White spot lesion
OTHER TYPES OF PREDICTORS	Predictor
Examiner's judgement	[3] examiner's score; predicted caries score
Combinations	[3] fluorosis x white spot lesion
Excluded predictors	[3] other referral score; use of fluoride drops; fluoride tablets or vitamins, visual dental plaque X fissure morphology, visual dental plaque X ms in saliva, visual dental plaque X lbc in saliva, ms in saliva X white spot lesion, lbc in saliva X

	white spot lesion, ms in saliva X fissure morphology, lbc in saliva X fissure morphology, race X education, race X age, race X other children and race X sex [4–M1-M11] caregiver believes child does not have a ‘very good’ medical health; caregiver supervises child’s tooth brushing regularly; caregiver supervises child’s tooth brushing occasionally; child has been to the dentist in past 3-6 months vs >6 months; [4–M1, M2, M4-M8] caregiver received referral for child; [4–M4, M5, M9-M11] child has been to the dentist in past 3 months vs 6 months; [4–M1, M2, M4-M11] child soda between meals
REFERENCES 1. Angulo, 1995 [13] 2. Demers, 1992 [14] 3. Disney, 1992 [15] 4. Fontana, 2011 [16] 5. Gao, 2010 [17] 6. Hänsel Petersson, 2002 [18] 7. Pang, 2021 [19] 8. Sánchez-Pérez, 2009 [20]	One model / [12-13 years] Two models (M1, M2) / [5-8 years] One model [6-10 years] / [6-10 years] Eleven models (M1-M11) / [5-13 years] Five models (M1-M5) / [12-13 years] / [3-6 years] One model / [10 years] One model / [13-14 years] One model / [6 years]