Supplementary material:

**Childhood oral infections associate with adulthood metabolic syndrome:**

**A longitudinal cohort study**

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- Metabolic syndrome diagnosis

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Clinical and biochemical assessment

Height, weight, and waist/hip circumference were measured at all examinations using standardized protocols (Raitakari 2008). Baseline blood pressure was measured by a mercury sphygmomanometer, in follow-up studies a random zero mercury sphygmomanometer was used. Blood pressure was measured in the sitting position after a 5-minute rest and the average of three measurements was used. Venous blood samples were collected after a 12-hour fast. Triglyceride, total cholesterol, HDL cholesterol and glucose concentrations were determined as previously described and the levels were corrected for the changes in the methodology (Porkka 1997; Juonala 2004).

MetS diagnosis

Adulthood MetS was defined using widely accepted international criteria (Alberti et al. 2009), and diagnosed by the presence of at least three of the following five components: 1) waist circumference ≥102 cm for males and ≥88 cm for females; 2) triglycerides ≥1.7 mmol/L (≥150 mg/dL) or specific treatment for hypertriglyceridemia; 3) HDL cholesterol <1.0 mmol/L (<40 mg/dL) in males or <1.3 mmol/L (<50 mg/dL) in females or lipid-lowering medication; 4) blood pressure ≥130/85 mmHg or treatment for hypertension; and 5) fasting plasma glucose ≥5.6 mmol/L (≥100 mg/dL) or specific drug treatment of elevated glucose. The number of participants assessed at least once for MetS was 588 (77.9%). In 2001, 2007, and 2011, 472 (62.5%), 476 (63.0%), and 441 (58.4%) participants were assessed for MetS, respectively.

In the present sub-population we calculated the prevalence according to the modified National Cholesterol Education Program (Expert Panel 2001). A participant was categorized as having MetS if he or she had any 3 of the following 5 components: BMI or waist circumference ≥75th percentile; systolic or diastolic blood pressure ≥75th percentile; HDL-cholesterol ≤25th percentile; triglycerides ≥75th percentile; or insulin/glucose ≥75th percentile.

References:

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Juonala M, Viikari JS, Hutri-Kähönen N, Pietikäinen M, Jokinen E, Taittonen L, Marniemi J, Rönnemaa T, Raitakari OT. 2004. The 21-year follow-up of the Cardiovascular Risk in Young Finns Study: risk factor levels, secular trends and east-west difference. J Intern Med. 255(4):457-468.

Porkka KV, Raitakari OT, Leino A et al. 1997. Trends in serum lipid levels during 1980–1992 in children and young adults. The Cardiovascular Risk in Young Finns Study. Am J Epidemiol. 146:64–77.

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### Supplementary table 1. Frequencies of oral infections in those participating or not in adulthood clinical follow-up.

| Clinical examination in the follow-up | Presence of childhood oral parameters in 1980 |
|--------------------------------------|----------------------------------------------|
|                                      | Caries                        | Fillings                     | Bleeding on probing | Increased probing pocket depth | Visible plaque |
|                                      | Frequency (%) | P² | Frequency (%) | P² | Frequency (%) | P² | Frequency (%) | P² | Frequency (%) | P² |
| No, n=167                            | 19 (19.2)    | 0.452 | 148 (22.6) |   | 29 (21.6)    | 0.883 | 138 (22.2) |   | 53 (20.2)    | 0.341 | 114 (23.3) |   | 71 (21.2)    | 0.611 | 89 (22.8) |   | 19 (19.2) | 0.452 | 148 (22.6) |   |
| Yes, n=588                           | 80 (80.8)    |   | 508 (774) |     | 105 (78.4)   |   | 483 (77.8) |     | 210 (79.8)   |   | 378 (76.8) |     | 264 (78.8)   |   | 302 (77.2) |     | 80 (80.8) |   | 508 (77.4) |   |

² Chi-square test.
Supplementary Table 2. Number of participants in the adulthood follow-ups.

| Year | 2011    | 2007    | 2001    |
|------|---------|---------|---------|
| Adulthood 2001 | 349 (46.2) | 384 (50.9) | 472 (62.5) |
| 2007 | 376 (49.8) | 476 (63.0) |         |
| 2011 | 441 (58.4) |         |         |

| Not | Once | Twice  | Three times | At least once |
|-----|------|--------|-------------|---------------|
| 167 (22.1) | 95 (12.6) | 185 (24.5) | 308 (40.8) | 588 (77.9) |

1 Number and percentage from the whole population, n=755.
Supplementary table 3. Frequencies of oral infections according to childhood MetS and its components.

| MetS components in 1980 | Presence of childhood oral parameters in 1980 |
|------------------------|----------------------------------------------|
|                        | Caries                                      | Fillings                                   | Bleeding on probing | Increased probing pocket depth | Visible plaque |
|                        | Frequency (%) | P² | Frequency (%) | P² | Frequency (%) | P² | Frequency (%) | P² | Frequency (%) | P² |
| High systolic blood pressure | no 15 (8.0) | 0.020 | yes 172 (92.0) | | no 20 (10.7) | 0.004 | yes 167 (89.3) | | no 73 (39.0) | 0.155 | yes 114 (61.0) | 0.581 | no 82 (44.3) | 0.561 |
| High BMI                | no 12 (6.3) | 0.001 | yes 177 (93.7) | | no 14 (7.4) | <0.001 | yes 175 (92.6) | | no 53 (28.0) | 0.023 | yes 136 (72.0) | 0.692 | no 85 (45.0) | 0.571 |
| Low HDL                 | no 32 (17.3) | 0.056 | yes 153 (82.7) | | no 43 (23.2) | 0.023 | yes 142 (76.8) | | no 69 (37.3) | 0.419 | yes 116 (62.7) | 0.742 | no 81 (45.0) | 0.003 |
| High glucose³           | no 20 (27.0) | 0.830 | yes 140 (28.2) | | no 26 (26.8) | 0.761 | yes 134 (28.3) | | no 61 (31.0) | 0.264 | yes 99 (26.5) | 0.77 | no 51 (20.9) | 0.9 |
| High TG                 | no 18 (9.8) | 0.118 | yes 166 (90.2) | | no 27 (14.7) | 0.218 | yes 157 (85.3) | | no 57 (31.0) | 0.206 | yes 127 (69.0) | 0.976 | no 84 (46.2) | 0.003 |
| Number of childhood MetS components without glucose⁴ | |
| 0 n=309                | 46 (14.9) | 0.197 | 263 (85.1) | | 62 (20.1) | 0.094 | 247 (79.9) | | 114 (36.9) | 0.523 | 195 (63.1) | 0.799 | 136 (47.4) | 0.462 |
| 1 n=226                | 34 (15.0) | 0.67 | 192 (85.0) | | 45 (19.9) | 0.03 | 181 (80.1) | | 73 (32.3) | 0.12 | 153 (67.7) | 0.20 | 102 (46.2) | 0.76 |
| 2 n=146                | 13 (8.9) | 0.35 | 133 (91.1) | | 18 (12.3) | 0.01 | 128 (87.7) | | 52 (35.6) | 0.52 | 94 (64.4) | 0.33 | 63 (43.8) | 0.12 |
| 3 n=51                 | 4 (7.8) | 0.01 | 47 (92.2) | | 6 (11.8) | 0.01 | 45 (88.2) | | 14 (27.5) | 0.57 | 37 (72.5) | 0.57 | 21 (41.2) | 0.28 |
| 4 n=18                 | 1 (5.6) | 0.01 | 17 (94.4) | | 1 (5.6) | 0.01 | 17 (94.4) | | 8 (27.5) | 0.01 | 10 (55.6) | 0.01 | 10 (55.6) | 0.01 |
| Number of childhood MetS components with glucose (year 1986)⁵ | |
| 0 n=176                | 26 (14.8) | 0.729 | 150 (85.2) | | 35 (19.9) | 0.361 | 141 (80.1) | | 61 (34.7) | 0.995 | 115 (65.3) | 0.402 | 83 (50.3) | 0.189 |
| 1 n=182                | 27 (14.8) | 0.34 | 155 (85.2) | | 36 (19.8) | 0.36 | 146 (80.2) | | 63 (34.6) | 0.39 | 119 (65.4) | 0.76 | 76 (44.2) | 0.41 |
| 2 n=139                | 14 (10.1) | 0.01 | 125 (89.9) | | 17 (12.2) | 0.01 | 122 (87.8) | | 49 (35.3) | 0.04 | 90 (64.7) | 0.55 | 55 (40.1) | 0.44 |
| 3 n=49                 | 5 (10.2) | 0.01 | 44 (89.8) | | 7 (14.3) | 0.01 | 42 (85.7) | | 16 (32.7) | 0.01 | 33 (67.3) | 0.01 | 20 (41.7) | 0.01 |
| MetS (≥ 3 components) | No n=497 | 4 n=19 | 5 n=2 |
|-----------------------|-----------|--------|-------|
|                       | 2 (10.5)  | 17 (89.5) | 2 (10.5) |
|                       | 17 (89.5) | 2 (10.5)  | 0 (100)  |
|                       | 6 (31.6)  | 13 (68.4) | 1 (50.0) |
|                       | 9 (47.4)  | 10 (52.6) | 0 (100)  |
|                       | 5 (26.3)  | 14 (73.7) | 0 (100)  |
| **MetS**              |           |         |       |
|                       | 0.418     | 0.313   | 0.748 |
|                       | 0.318     | 0.313   | 0.748 |
|                       | 1.215     | 1.215   | 1.215 |
| **Plasma glucose**    |           |         |       |
|                       | 2 (100)   | 2 (100) | 2 (100) |
|                       | 3 (100)   | 3 (100) | 3 (100) |
|                       | 0.107     | 0.107   | 0.107 |

1 Presence of a positive MetS component is defined as belonging to the highest quartile (the lowest quartile of HDL cholesterol). 2 Chi-square test. 3 Plasma glucose concentration determined in 1986; 4 N=750; 5 N=567.
## Supplementary table 4. Characteristics of the population.

| Characteristic                        | Adulthood examination year |  |  |  |
|---------------------------------------|----------------------------|---|---|---|
|                                       | Year 2001                  | Year 2007 | Year 2011 |
| MetS in adulthood                     | No (n=414)                 | Yes (n=56) | No (n=386) | Yes (n=89) | No (n=349) | Yes (n=91) |
|                                       | N (%)                      | P^1        | N (%)       | P^1       | N (%)       | P^1       |
| Sex (males)                           | 185 (44.5)                 | 33 (58.9)  | 0.042       | 168 (43.4) | 50 (56.2)  | 0.029     | 145 (41.5) | 50 (54.3)  | 0.028     |
| Current smoker                        | 102 (25.0)                 | 15 (26.8)  | 0.773       | 82 (23.9)  | 23 (29.1)  | 0.334     | 57 (17.5)  | 16 (19.3)  | 0.712     |
| Education                              |                            |            |             |            |            |           |           |            |           |
| Basic                                 | 35 (8.5)                   | 5 (8.9)    | 0.712       | 19 (4.9)   | 4 (4.5)    | 0.049     | 7 (2.1)    | 4 (4.8)    | 0.013     |
| Occupational                          | 269 (65.0)                 | 39 (69.6)  |             | 238 (61.8) | 67 (75.3)  |           | 200 (61.3) | 62 (74.7)  |           |
| Academic                               | 110 (26.6)                 | 12 (21.4)  |             | 128 (33.2) | 18 (20.2)  |           | 119 (36.5) | 17 (20.5)  |           |
| Characteristic in 1980                 |                            |            |             |            |            |           |           |            |           |
| Age (years)                           | 8.0 (2.0)                  | 8.5 (1.8)  | 0.057       | 7.8 (2.1)  | 8.5 (1.9)  | 0.010     | 7.8 (2.0)  | 8.6 (1.9)  | 0.001     |
| Systolic blood pressure (mmHg)        | 109 (9)                    | 113 (10)   | 0.003       | 109 (9)    | 113 (10)   | <0.001    | 109 (9)    | 113 (9)    | 0.001     |
| Diastolic blood pressure (mmHg)       | 67 (9)                     | 69 (10)    | 0.102       | 67 (9)     | 68 (10)    | 0.655     | 67 (9)     | 69 (10)    | 0.074     |
| BMI (kg/m^2)                          | 16.6 (2.0)                 | 17.5 (2.3) | 0.003       | 16.6 (2.1) | 17.3 (2.3) | 0.003     | 16.5 (2.2) | 17.3 (2.2) | 0.004     |
| Cholesterol (mmol/l)                  | 5.4 (0.88)                 | 5.6 (0.85) | 0.239       | 5.4 (0.86) | 5.4 (0.98) | 0.745     | 5.4 (0.91) | 5.3 (0.90) | 0.483     |
| HDL cholesterol (mmol/l)              | 1.64 (0.31)                | 1.56 (0.31)| 0.064       | 1.65 (0.30) | 1.56 (0.31) | 0.010     | 1.64 (0.31) | 1.59 (0.30) | 0.234     |
| Triglycerides (mmol/l)                | 0.58 (0.25)                | 0.67 (0.26)| 0.023       | 0.58 (0.25) | 0.68 (0.27) | 0.002     | 0.58 (0.27) | 0.68 (0.28) | 0.003     |
| LDL cholesterol (mmol/l)              | 3.49 (0.81)                | 3.68 (0.78)| 0.093       | 3.49 (0.78) | 3.58 (0.88) | 0.370     | 3.49 (0.82) | 3.42 (0.83) | 0.450     |
| Family income (among 8 classes)       | 5.33 (1.74)                | 4.82 (1.76)| 0.040       | 5.45 (1.74) | 4.91 (1.66) | 0.009     | 5.52 (1.70) | 4.89 (1.71) | 0.002     |

^1 Chi-square test; ^2 t-test.
Supplementary table 5. Frequencies of caries and fillings in deciduous and permanent teeth and MetS.

| Year of MetS assessment, presence of MetS | Caries in childhood oral examination |                |                |                |                |                |                |                |                |                |                |                |                |                |                |
|-----------------------------------------|-------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                                         | Untreated caries, n (%)             | Deciduous teeth |                | Permanent teeth |                |                | Deciduous teeth |                |                |                |                | Permanent teeth |                |                |                |                |
|                                         | With | Without | \( p^1 \) | With | Without | \( p^1 \) | With | Without | \( p^1 \) | With | Without | \( p^1 \) | With | Without | \( p^1 \) | With | Without | \( p^1 \) | With | Without | \( p^1 \) |
| 2001                                    | No   | 138 (89.6) | 278 (87.4) | 129 (88.4) | 287 (88.0) | 221 (87.7) | 195 (88.6) | 241 (85.8) | 175 (91.6) | 0.965 | 17 (11.6) | 39 (12.0) | 31 (12.3) | 25 (11.4) | 0.331 | 40 (14.2) | 16 (8.4) | 0.372 |
|                                         | Yes  | 16 (10.4)  | 40 (12.6)  | 0.965 | 17 (11.6) | 39 (12.0) | 31 (12.3) | 25 (11.4) | 0.331 | 40 (14.2) | 16 (8.4) | 0.372 |
| 2007                                    | No   | 138 (87.9) | 249 (78.1) | 117 (84.2) | 270 (80.1) | 210 (81.1) | 177 (81.6) | 226 (78.7) | 161 (85.2) | 0.052 | 22 (15.8) | 67 (19.9) | 49 (18.9) | 40 (18.4) | 0.338 | 61 (21.3) | 28 (14.8) | 0.972 |
|                                         | Yes  | 19 (12.1)  | 70 (21.9)  | 0.052 | 22 (15.8) | 67 (19.9) | 49 (18.9) | 40 (18.4) | 0.338 | 61 (21.3) | 28 (14.8) | 0.972 |
| 2011                                    | No   | 119 (86.2) | 230 (75.9) | 103 (78.6) | 246 (79.4) | 197 (82.8) | 152 (74.9) | 196 (74.5) | 153 (86.0) | 0.126 | 69 (24.6) | 28 (21.4) | 41 (17.2) | 51 (25.1) | 0.299 | 67 (25.5) | 25 (14.0) | 0.246 |
|                                         | Yes  | 19 (13.8)  | 73 (24.1)  | 0.126 | 69 (24.6) | 28 (21.4) | 41 (17.2) | 51 (25.1) | 0.299 | 67 (25.5) | 25 (14.0) | 0.246 |
| Any                                      | No   | 158 (79.0) | 276 (71.0) | 133 (73.9) | 301 (73.6) | 244 (74.8) | 190 (72.2) | 240 (69.2) | 194 (80.2) | 0.287 | 47 (26.1) | 108 (26.4) | 82 (25.2) | 72 (27.8) | 0.696 | 107 (30.8) | 48 (19.8) | 0.208 |
|                                         | Yes  | 42 (21.0)  | 112 (29.0) | 0.287 | 47 (26.1) | 108 (26.4) | 82 (25.2) | 72 (27.8) | 0.696 | 107 (30.8) | 48 (19.8) | 0.208 |

\( p \)-values are adjusted for age and sex.
Supplementary Table 6. Presence of metabolic syndrome and its components in the follow-up according to the presence of childhood oral parameters.

| Assessment year of MetS and its components | Presence of childhood oral parameters in 1980 |  |
|-------------------------------------------|---------------------------------------------|--|
|                                            | Caries | Fillings | Bleeding on probing | Increased probing pocket depth | Visible plaque |
|                                           | Frequency (%) | p² | Frequency (%) | p² | Frequency (%) | p² | Frequency (%) | p² | Frequency (%) | p² |
|                                           | no   | yes   | no   | yes | no   | yes | no   | yes | no   | yes |
| High systolic blood pressure              |      |       |      |     |      |     |      |     |      |     |
| 2001                                      | 4.5  | 22.3  | 0.012 |     | 8.0  | 22.5 | 0.032 |     | 17.9 | 21.0 | NS   | 21.9 | 18.8 | NS   | 21.2 | 19.6 | NS   |
| 2007                                      | 11.3 | 28.9  | 0.018 |     | 9.2  | 30.1 | 0.002 |     | 26.4 | 26.4 | NS   | 25.2 | 28.7 | NS   | 32.3 | 24.4 | NS   |
| 2011                                      | 11.6 | 27.5  | 0.048 |     | 12.9 | 27.9 | 0.010 |     | 18.6 | 28.9 | 0.025 | 22.3 | 27.2 | NS   | 19.5 | 27.1 | 0.050 |
| Any                                       | 17.0 | 40.9  | 0.019 |     | 17.2 | 41.9 | 0.008 |     | 29.8 | 41.4 | 0.044 | 35.6 | 39.1 | NS   | 30.1 | 40.0 | NS   |
| Large waist                               |      |       |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |
| 2001                                      | 9.0  | 18.0  | NS   |     | 11.5 | 17.9 | NS   |     | 14.6 | 17.9 | NS   | 19.7 | 15.1 | NS   | 13.7 | 17.6 | NS   |
| 2007                                      | 14.5 | 28.9  | 0.035 |     | 16.5 | 29.1 | 0.049 |     | 22.0 | 29.6 | NS   | 26.4 | 28.2 | NS   | 20.0 | 28.9 | 0.001 |
| 2011                                      | 21.7 | 38.2  | 0.049 |     | 22.4 | 38.7 | 0.048 |     | 33.5 | 36.9 | NS   | 36.8 | 35.9 | NS   | 38.1 | 34.5 | NS   |
| Any                                       | 21.6 | 43.2  | 0.012 |     | 24.2 | 43.4 | 0.017 |     | 34.5 | 42.9 | NS   | 41.4 | 40.6 | NS   | 34.8 | 41.4 | NS   |
| Low HDL                                   |      |       |      |     |      |     |      |     |      |     |      |     |      |     |      |     |
| 2001                                      | 36.8 | 35.5  | NS   |     | 40.9 | 34.5 | NS   |     | 36.6 | 35.1 | NS   | 38.7 | 33.5 | NS   | 30.7 | 37.3 | NS   |
| 2007                                      | 18.1 | 33.8  | 0.003 |     | 25.3 | 32.8 | NS   |     | 28.5 | 33.2 | NS   | 31.2 | 32.3 | NS   | 24.2 | 34.3 | 0.045 |
| 2011                                      | 33.3 | 33.2  | NS   |     | 35.3 | 32.8 | NS   |     | 32.3 | 33.8 | NS   | 39.6 | 28.0 | 0.014 | 25.4 | 35.9 | 0.048 |
| Any                                       | 49.1 | 50.5  | NS   |     | 53.8 | 49.5 | NS   |     | 50.8 | 50.0 | NS   | 53.2 | 46.7 | NS   | 44.2 | 52.5 | NS   |
| High glucose                              |      |       |      |     |      |     |      |     |      |     |      |     |      |     |      |     |
| 2001                                      | 8.8  | 10.6  | NS   |     | 10.2 | 10.4 | NS   |     | 9.1  | 11.1 | NS   | 11.1 | 9.7  | NS   | 7.9  | 11.3 | NS   |
| 2007                                      | 15.3 | 20.7  | NS   |     | 14.8 | 21.0 | NS   |     | 19.0 | 20.4 | NS   | 22.8 | 18.0 | 0.037 | 20.3 | 19.8 | NS   |
| 2011                                      | 20.3 | 26.5  | NS   |     | 20.0 | 26.8 | NS   |     | 20.4 | 28.6 | 0.037 | 27.6 | 24.4 | NS   | 21.2 | 27.2 | NS   |
| Any                                       | 32.7 | 33.3  | NS   |     | 30.0 | 33.9 | NS   |     | 25.8 | 37.7 | 0.021 | 36.7 | 31.0 | NS   | 26.3 | 36.0 | NS   |
| High TG                                   |      |       |      |     |      |     |      |     |      |     |      |     |      |     |      |     |
| 2001                                      | 23.5 | 24.3  | NS   |     | 27.3 | 23.6 | NS   |     | 24.6 | 24.1 | NS   | 27.2 | 22.6 | NS   | 23.6 | 24.6 | NS   |
| 2007                                      | 20.8 | 25.2  | NS   |     | 21.6 | 25.2 | NS   |     | 21.2 | 25.3 | 0.019 | 22.3 | 25.7 | NS   | 23.4 | 24.8 | NS   |
| 2011                                      | 14.5 | 21.3  | NS   |     | 17.6 | 20.9 | NS   |     | 22.8 | 18.8 | NS   | 20.3 | 18.6 | NS   | 18.6 | 20.9 | NS   |
| Any                                       | 30.9 | 40.4  | NS   |     | 36.4 | 39.5 | NS   |     | 37.5 | 39.7 | NS   | 37.4 | 40.3 | NS   | 30.5 | 42.3 | 0.046 |
| MetS                                      |      |       |      |     |      |     |      |     |      |     |      |     |      |     |      |     |
| 2001                                      | 6.2  | 12.8  | NS   |     | 8.2  | 12.7 | NS   |     | 12.6 | 11.6 | NS   | 15.5 | 19.7 | NS   | 11.5 | 12.1 | NS   |
| 2007                                      | 11.6 | 19.9  | NS   |     | 11.0 | 20.3 | 0.049 |     | 19.9 | 18.0 | NS   | 18.2 | 19.6 | NS   | 19.5 | 18.5 | NS   |
| 2011                                      | 17.9 | 21.4  | NS   |     | 16.9 | 21.8 | NS   |     | 18.8 | 22.1 | NS   | 23.4 | 19.5 | NS   | 21.4 | 20.7 | NS   |
| Any                                       | 26.8 | 43.7  | 0.048 |     | 28.4 | 43.9 | 0.049 |     | 35.7 | 44.4 | NS   | 45.8 | 39.5 | NS   | 34.3 | 43.9 | NS   |

¹Year in adulthood when MetS or its component was diagnosed; ²p-values adjusted for age and sex. Statistically significant results are highlighted in bold.

MetS = metabolic syndrome; NS = not significant
Supplementary table 7. Association of childhood oral parameters with the metabolic parameters in linear regression models.

| Period | Year | DMFT | Percentage of sites with BOP or increased PPD |
|--------|------|------|---------------------------------------------|
|        |      | Beta, p | $R^2$ | Beta, p | $R^2$ |
| Childhood | 1980 | BMI | 0.041, 0.290 | 0.034, 0.415 |
|          |      | Systolic blood pressure | 0.022, 0.975 | 0.005, 0.893 |
|          |      | Diastolic blood pressure | **0.080, 0.026** | 0.129, 0.001 | 0.015 |
|          |      | HDL-cholesterol | -0.039, 0.287 | -0.063, 0.106 |
|          |      | Triglycerides | 0.015, 0.682 | 0.025, 0.529 |
|          | 1983 | BMI | 0.054, 0.213 | **0.125, 0.006** | 0.003 |
|          |      | Systolic blood pressure | 0.046, 0.128 | 0.065, 0.138 |
|          |      | Diastolic blood pressure | 0.012, 0.748 | 0.038, 0.355 |
|          |      | HDL-cholesterol | -0.052, 0.187 | -0.049, 0.241 |
|          |      | Triglycerides | 0.002, 0.950 | 0.046, 0.263 |
|          | 1986 | BMI | **0.080, 0.026** | 0.016, 0.732 |
|          |      | Systolic blood pressure | 0.059, 0.200 | 0.053, 0.190 |
|          |      | Diastolic blood pressure | **0.091, 0.034** | **0.077, 0.035** | 0.003 |
|          |      | HDL-cholesterol | -0.055, 0.185 | -0.020, 0.648 |
|          |      | Triglycerides | 0.027, 0.510 | 0.041, 0.343 |
|          |      | Glucose | 0.031, 0.458 | **0.141, 0.001** | 0.025 |
| Adulthood | 2001 | BMI | 0.070, 0.113 | 0.030, 0.532 |
|          |      | Waist circumference | 0.072, 0.090 | 0.067, 0.201 |
|          |      | Systolic blood pressure | **0.093, 0.042** | **0.087, 0.047** | 0.008 |
|          |      | Diastolic blood pressure | 0.040, 0.387 | 0.037, 0.446 |
|          |      | HDL-cholesterol | -0.051, 0.297 | -0.083, 0.079 |
|          |      | Triglycerides | 0.040, 0.383 | 0.046, 0.344 |
|          |      | Glucose | 0.032, 0.479 | 0.034, 0.477 |
|          | 2007 | BMI | 0.076, 0.094 | 0.056, 0.200 |
|          |      | Waist circumference | 0.067, 0.161 | **0.105, 0.040** | 0.009 |
|          |      | Systolic blood pressure | 0.067, 0.144 | **0.085, 0.048** | 0.007 |
|          |      | Diastolic blood pressure | **0.086, 0.048** | **0.083, 0.050** | 0.007 |
|          |      | HDL-cholesterol | -0.031, 0.524 | -0.051, 0.215 |
|                | 2011       | 2012       | 2013       |
|----------------|------------|------------|------------|
| Triglycerides  | 0.043, 0.356 | 0.021, 0.666 |            |
| Glucose        | 0.032, 0.480 | 0.026, 0.587 |            |
| BMI            | 0.122, 0.009 | 0.022 | 0.069, 0.150 |
| Waist circumference | 0.092, 0.042 | 0.016 | 0.013, 0.800 |
| Systolic blood pressure | 0.068, 0.197 |            | 0.140, 0.008 | 0.012 |
| Diastolic blood pressure | 0.102, 0.037 | 0.028 | 0.137, 0.008 | 0.013 |
| HDL-cholesterol | -0.022, 0.662 |            | -0.059, 0.264 |
| Triglycerides  | 0.009, 0.856 |            | 0.020, 0.696 |
| Glucose        | 0.012, 0.794 |            | 0.023, 0.646 |

Oral infections/inflammations presented as number of decayed, missing, and filled teeth (DMFT) or percentage of sites (bleeding and probing pocket depth).
The models are adjusted for age, sex, childhood BMI and family income. BMI and waist circumference are not adjusted for BMI. R² values are reported from corresponding unadjusted simple linear regressions with fitting models. Statistically significant values are bolded.
Supplementary figure. Frequencies of oral infections in children with or without MetS in adulthood.