**Table S1 Analytical information of PFAS analyses in the HBM4EU Aligned Studies (2014-2021)**

| Data collection | Biological Matrix | Analytical Method | PFAS Forms | HBM4EU QA/QC label* |
|---|---|---|---|---|
| **Riksmaten Adolescents** | Blood serum | UPLC-MS/MS | PFOS, PFOA, PFHxS: linear + branched forms<br>All other PFAS: linear forms | Label C |
| **NEB II** | Blood plasma | LC-MS/MS | All PFAS: linear + branched forms | Label A |
| **PCB cohort follow-up** | Blood serum | LC-MS/MS | All PFAS: linear + branched forms | Label A |
| **BEA** | Blood serum | LC-MS/MS | PFOS: linear + branched form<br>All other PFAS: linear forms | Label A |
| **SLO CRP** | Blood serum | LC-MS/MS | All PFAS: linear + branched forms | Label A |
| **CROME** | Blood serum | LC-MS/MS | All PFAS: linear + branched forms | Label A |
| **ESTEBAN** | Blood serum | LC-MS/MS | All PFAS: linear forms | Label B |
| **GerES V-sub** | Blood plasma | LC-MS/MS | PFOS: linear + branched form<br>All other PFAS: linear forms | Label B |
| **FLEHS IV** | Blood serum | LC-MS/MS | All PFAS: linear forms | Label A |

Abbreviations: LC = Liquid chromatography; MS/MS = tandem mass spectrometry; UPLC = ultra-high performance liquid chromatography

*HBM4EU QA/QC labels: Label A = Biomarker data quality assured by HBM4EU QA/QC program; Label B = Biomarker data generated before HBM4EU QA/QC program but deemed comparable by HBM4EU Quality Assurance Unit (QAU); Label C = Biomarker data generated before HBM4EU QA/QC program but comparability not guaranteed by HBM4EU Quality Assurance Unit (QAU).

**Table S2 PFAS exposure levels (µg/L)\* in HBM4EU Aligned Studies in teenagers by study**

| PFOS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Data collection** | **N** | **LOQ** | **%>LOQ** | **P05** | **P10** | **P25** | **P50** | **P75** | **P90** | **P95** |
| **Riksmaten Adolescents** | 300 | 0.056-0.562 | 100 | 1.21 | 1.41 | 1.97 | 2.68 | 4.08 | 6.28 | 8.23 |
| **NEB II** | 177 | 0.05 | 100 | 1.47 | 1.74 | 2.18 | 2.79 | 3.68 | 5.26 | 7.04 |
| **PCB cohort follow-up** | 292 | 0.04 | 100 | 0.49 | 0.63 | 0.84 | 1.37 | 2.47 | 4.07 | 6.15 |
| **BEA** | 299 | 0.33 | 100 | 0.57 | 0.73 | 0.93 | 1.34 | 1.84 | 2.66 | 3.06 |
| **SLO CRP** | 94 | 0.09 | 100 | 0.83 | 0.95 | 1.17 | 1.65 | 2.70 | 3.73 | 5.82 |
| **CROME** | 52 | 0.09 | 100 | 1.25 | 1.39 | 1.58 | 2.11 | 3.23 | 4.18 | 5.21 |
| **ESTEBAN** | 143 | 0.1 | 100 | 0.98 | 1.13 | 1.52 | 2.01 | 3.12 | 5.22 | 6.16 |
| **GerES V-sub** | 300 | 0.25 | 100 | 1.27 | 1.55 | 1.96 | 2.61 | 3.47 | 4.58 | 5.90 |
| **FLEHS IV** | 300 | 0.2 | 100 | 0.85 | 1.00 | 1.58 | 2.20 | 3.40 | 5.01 | 7.31 |

| PFOA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Data collection** | **N** | **LOQ** | **%>LOQ** | **P05** | **P10** | **P25** | **P50** | **P75** | **P90** | **P95** |
| **Riksmaten Adolescents** | 300 | 0.02-0.288 | 100 | 0.55 | 0.69 | 0.89 | 1.15 | 1.51 | 2.03 | 2.36 |
| **NEB II** | 177 | 0.05 | 100 | 0.77 | 0.87 | 1.05 | 1.28 | 1.57 | 1.95 | 2.09 |
| **PCB cohort follow-up** | 292 | 0.014 | 99.7 | 0.25 | 0.32 | 0.48 | 0.71 | 0.96 | 1.18 | 1.39 |
| **BEA** | 299 | 0.16 | 100 | 0.38 | 0.43 | 0.52 | 0.66 | 0.80 | 0.93 | 1.03 |
| **SLO CRP** | 94 | 0.07 | 100 | 0.53 | 0.63 | 0.74 | 0.86 | 1.06 | 1.20 | 1.44 |
| **CROME** | 52 | 0.07 | 100 | 0.57 | 0.62 | 0.75 | 0.88 | 1.24 | 1.79 | 2.19 |
| **ESTEBAN** | 143 | 0.05 | 100 | 0.90 | 0.96 | 1.22 | 1.47 | 1.79 | 2.35 | 2.62 |
| **GerES V-sub** | 300 | 0.5 | 86.3 | <LOQ | <LOQ | 0.81 | 1.26 | 1.80 | 2.70 | 3.12 |
| **FLEHS IV** | 300 | 0.2 | 100 | 0.61 | 0.74 | 0.88 | 1.10 | 1.40 | 1.60 | 1.80 |

| PFNA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Data collection** | **N** | **LOQ** | **%>LOQ** | **P05** | **P10** | **P25** | **P50** | **P75** | **P90** | **P95** |
| **Riksmaten Adolescents** | 300 | 0.058-0.288 | 94.0 | <LOQ | 0.18 | 0.27 | 0.38 | 0.51 | 0.76 | 0.86 |
| **NEB II** | 177 | 0.05 | 100 | 0.22 | 0.25 | 0.32 | 0.44 | 0.62 | 0.87 | 1.00 |
| **PCB cohort follow-up** | 292 | 0.016 | 93.8 | <LOQ | 0.03 | 0.09 | 0.17 | 0.26 | 0.38 | 0.46 |
| **BEA** | 299 | 0.16 | 89.3 | <LOQ | <LOQ | 0.21 | 0.28 | 0.38 | 0.51 | 0.60 |
| **SLO CRP** | 94 | 0.012 | 100 | 0.13 | 0.16 | 0.19 | 0.25 | 0.31 | 0.42 | 0.51 |
| **CROME** | 52 | 0.012 | 100 | 0.23 | 0.26 | 0.31 | 0.42 | 0.56 | 0.71 | 0.84 |
| **ESTEBAN** | 143 | 0.2 | 99.3 | 0.29 | 0.34 | 0.43 | 0.54 | 0.71 | 1.01 | 1.38 |
| **GerES V-sub** | 300 | 0.5 | 12.0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | 0.59 | 0.73 |
| **FLEHS IV** | 300 | 0.2 | 82.0 | <LOQ | <LOQ | 0.23 | 0.32 | 0.44 | 0.60 | 0.74 |

| PFHxS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Data collection** | **N** | **LOQ** | **%>LOQ** | **P05** | **P10** | **P25** | **P50** | **P75** | **P90** | **P95** |
| **Riksmaten Adolescents** | 300 | 0.022-0.464 | 89.0 | <LOQ | <LOQ | 0.26 | 0.39 | 0.58 | 0.88 | 1.10 |
| **NEB II** | 177 | 0.05 | 100 | 0.23 | 0.26 | 0.37 | 0.48 | 0.62 | 0.94 | 1.19 |
| **PCB cohort follow-up** | 292 | 0.016 | 99.7 | 0.13 | 0.16 | 0.21 | 0.29 | 0.44 | 0.75 | 0.99 |
| **BEA** | 299 | 0.34 | 20.1 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | 0.51 | 0.77 |
| **SLO CRP** | 94 | 0.014 | 100 | 0.14 | 0.15 | 0.19 | 0.23 | 0.30 | 0.36 | 0.42 |
| **CROME** | 52 | 0.017 | 100 | 0.14 | 0.16 | 0.22 | 0.28 | 0.40 | 0.60 | 0.89 |
| **ESTEBAN** | 143 | 0.19 | 99.3 | 0.33 | 0.36 | 0.53 | 0.68 | 1.02 | 1.49 | 2.32 |
| **GerES V-sub** | 300 | 0.25 | 72.3 | <LOQ | <LOQ | <LOQ | 0.39 | 0.53 | 0.76 | 0.98 |
| **FLEHS IV** | 300 | 0.2 | 97.7 | 0.25 | 0.29 | 0.37 | 0.49 | 0.66 | 1.10 | 1.40 |

| PFPeA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Data collection** | **N** | **LOQ** | **%>LOQ** | **P05** | **P10** | **P25** | **P50** | **P75** | **P90** | **P95** |
| **PCB cohort follow-up** | 292 | 0.014 | 52.7 | <LOQ | <LOQ | <LOQ | 0.02 | 0.07 | 0.11 | 0.17 |
| **BEA** | 299 | 0.16 | 0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **SLO CRP** | 94 | 0.04 | 87.2 | <LOQ | <LOQ | 0.07 | 0.10 | 0.12 | 0.16 | 0.19 |
| **CROME** | 52 | 0.04 | 0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **ESTEBAN** | 143 | 0.05 | 0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **GerES V-sub** | 300 | 0.25 | 0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **FLEHS IV** | 300 | 0.2 | 0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |

| PFHxA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Data collection** | **N** | **LOQ** | **%>LOQ** | **P05** | **P10** | **P25** | **P50** | **P75** | **P90** | **P95** |
| **Riksmaten Adolescents** | 300 | 0.058-0.288 | 0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **PCB cohort follow-up** | 292 | 0.016 | 99.7 | 0.03 | 0.04 | 0.06 | 0.07 | 0.10 | 0.12 | 0.14 |
| **BEA** | 299 | 0.25 | 0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **SLO CRP** | 94 | 0.04 | 16.0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | 0.06 | 0.07 |
| **CROME** | 52 | 0.04 | 100 | 0.10 | 0.10 | 0.11 | 0.14 | 0.16 | 0.19 | 0.21 |
| **ESTEBAN** | 143 | 0.2 | 0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **GerES V-sub** | 300 | 0.25 | 0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **FLEHS IV** | 300 | 0.2 | 3.0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |

| PFHpA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Data collection** | **N** | **LOQ** | **%>LOQ** | **P05** | **P10** | **P25** | **P50** | **P75** | **P90** | **P95** |
| **Riksmaten Adolescents** | 300 | 0.058-0.288 | 8.3 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | 0.12 |
| **NEB II** | 177 | 0.05 | 78.0 | <LOQ | <LOQ | 0.05 | 0.07 | 0.10 | 0.13 | 0.16 |
| **PCB cohort follow-up** | 292 | 0.012 | 90.4 | <LOQ | 0.02 | 0.02 | 0.03 | 0.05 | 0.08 | 0.10 |
| **BEA** | 299 | 0.2 | 1.0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **SLO CRP** | 94 | 0.03 | 52.1 | <LOQ | <LOQ | <LOQ | 0.04 | 0.06 | 0.08 | 0.09 |
| **CROME** | 52 | 0.03 | 3.8 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **ESTEBAN** | 143 | 0.2 | 4.9 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **GerES V-sub** | 300 | 0.25 | 0.3 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **FLEHS IV** | 300 | 0.2 | 1.3 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |

| PFDA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Data collection** | **N** | **LOQ** | **%>LOQ** | **P05** | **P10** | **P25** | **P50** | **P75** | **P90** | **P95** |
| **Riksmaten Adolescents** | 300 | 0.058-0.288 | 59.0 | <LOQ | <LOQ | <LOQ | 0.15 | 0.24 | 0.33 | 0.43 |
| **NEB II** | 177 | 0.05 | 99.4 | 0.07 | 0.07 | 0.10 | 0.13 | 0.18 | 0.26 | 0.30 |
| **PCB cohort follow-up** | 292 | 0.03 | 67.8 | <LOQ | <LOQ | <LOQ | 0.05 | 0.10 | 0.15 | 0.17 |
| **BEA** | 299 | 0.2 | 15.7 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | 0.22 | 0.28 |
| **SLO CRP** | 94 | 0.01 | 100 | 0.08 | 0.08 | 0.10 | 0.14 | 0.19 | 0.24 | 0.28 |
| **CROME** | 52 | 0.01 | 100 | 0.10 | 0.11 | 0.14 | 0.17 | 0.25 | 0.37 | 0.40 |
| **ESTEBAN** | 143 | 0.2 | 60.8 | <LOQ | <LOQ | <LOQ | 0.22 | 0.31 | 0.41 | 0.51 |
| **GerES V-sub** | 300 | 0.25 | 11.7 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | 0.30 | 0.37 |
| **FLEHS IV** | 300 | 0.2 | 47.7 | <LOQ | <LOQ | <LOQ | <LOQ | 0.27 | 0.40 | 0.50 |

| PFunDA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Data collection** | **N** | **LOQ** | **%>LOQ** | **P05** | **P10** | **P25** | **P50** | **P75** | **P90** | **P95** |
| **Riksmaten Adolescents** | 300 | 0.058-0.288 | 47.0 | <LOQ | <LOQ | <LOQ | <LOQ | 0.17 | 0.25 | 0.35 |
| **NEB II** | 177 | 0.05 | 83.0 | <LOQ | <LOQ | 0.06 | 0.09 | 0.15 | 0.22 | 0.27 |
| **PCB cohort follow-up** | 292 | 0.013 | 42.5 | <LOQ | <LOQ | <LOQ | <LOQ | 0.03 | 0.06 | 0.08 |
| **BEA** | 299 | 0.2 | 8.4 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | 0.24 |
| **SLO CRP** | 94 | 0.012 | 96.8 | 0.02 | 0.02 | 0.04 | 0.06 | 0.08 | 0.11 | 0.12 |
| **CROME** | 52 | 0.012 | 75.0 | <LOQ | <LOQ | <LOQ | 0.04 | 0.08 | 0.13 | 0.17 |
| **ESTEBAN** | 143 | 0.05 | 93.7 | <LOQ | 0.06 | 0.07 | 0.11 | 0.15 | 0.22 | 0.29 |
| **GerES V-sub** | 300 | 0.25 | 1.0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **FLEHS IV** | 300 | 0.2 | 9.0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | 0.24 |

| PFDoDA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Data collection** | **N** | **LOQ** | **%>LOQ** | **P05** | **P10** | **P25** | **P50** | **P75** | **P90** | **P95** |
| **Riksmaten Adolescents** | 300 | 0.058-0.288 | 2.3 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **NEB II** | 177 | 0.05 | 0.6 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **PCB cohort follow-up** | 292 | 0.04 | 0.3 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **BEA** | 299 | 0.12 | 1.7 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **SLO CRP** | 94 | 0.016 | 10.6 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | 0.03 |
| **CROME** | 52 | 0.016 | 15.4 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | 0.02 | 0.02 |
| **ESTEBAN** | 143 | 0.05 | 5.6 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **GerES V-sub** | 300 | 0.25 | 0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **FLEHS IV** | 300 | 0.2 | 1.7 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |

| PFBS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Data collection** | **N** | **LOQ** | **%>LOQ** | **P05** | **P10** | **P25** | **P50** | **P75** | **P90** | **P95** |
| **Riksmaten Adolescents** | 300 | 0.04-0.544 | 17 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | 0.12 | 0.20 |
| **NEB II** | 177 | 0.05 | 1.1 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **PCB cohort follow-up** | 292 | 0.04 | 2.4 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **BEA** | 299 | 0.1 | 0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **SLO CRP** | 94 | 0.04 | 14.9 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | 0.19 | 0.37 |
| **CROME** | 52 | 0.04 | 0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **ESTEBAN** | 143 | 0.19 | 0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **GerES V-sub** | 300 | 0.25 | 0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **FLEHS IV** | 300 | 0.2 | 0.3 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |

| PFHpS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Data collection** | **N** | **LOQ** | **%>LOQ** | **P05** | **P10** | **P25** | **P50** | **P75** | **P90** | **P95** |
| **NEB II** | 177 | 0.05 | 41.2 | <LOQ | <LOQ | <LOQ | <LOQ | 0.06 | 0.08 | 0.10 |
| **PCB cohort follow-up** | 292 | 0.01 | 82.5 | <LOQ | <LOQ | 0.02 | 0.03 | 0.05 | 0.10 | 0.19 |
| **BEA** | 299 | 0.25 | 5.3 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | 0.25 |
| **SLO CRP** | 94 | 0.017 | 83.0 | <LOQ | <LOQ | 0.02 | 0.03 | 0.05 | 0.08 | 0.11 |
| **CROME** | 52 | 0.017 | 100 | 0.03 | 0.03 | 0.04 | 0.05 | 0.07 | 0.11 | 0.14 |
| **ESTEBAN** | 143 | 0.19 | 4.2 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |
| **FLEHS IV** | 300 | 0.2 | 3.0 | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ | <LOQ |

*PFAS-concentrations from Riksmaten Adolescents were originally reported in µg/kg. To convert them to µg/L, the assumption was made that 1 mL blood serum = 1 g blood serum.

**Table S3 Characteristics of teenagers and their households of the HBM4EU Aligned Studies (2014-2021)**

| Study | Riksmaten Adolescents n=300 | NEB II n=177 | PCB cohort follow-up n=292 | BEA n=299 | SLO CRP n=94 | CROME n=52 | ESTEBAN n=143 | GerES V-sub n=300 | FLEHS IV n=300 |
|---|---|---|---|---|---|---|---|---|---|
| **Characteristics** | n (%) or mean ± SD | | | | | | | | |
| **Teenager** | | | | | | | | | |
| **Sex** | | | | | | | | | |
| Boys | 150 (50) | 76 (43) | 125 (43) | 143 (48) | 52 (55) | 29 (56) | 62 (43) | 150 (50) | 150 (50) |
| Girls | 150 (50) | 101 (57) | 167 (57) | 156 (52) | 42 (45) | 23 (44) | 81 (57) | 150 (50) | 150 (50) |
| *Missing* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* |
| **Age** | 14.8 ± 1.6 | 12.3 ± 0.5 | 15.7 ± 0.6 | 14.8 ± 0.8 | 13.8 ± 0.8 | 14.4 ± 1.8 | 14.2 ± 1.6 | 14.5 ± 1.7 | 14.5 ± 0.6 |
| *Missing* | *0* | *0* | *0* | *4* | *0* | *0* | *0* | *0* | *0* |
| **Smoking** | | | | | | | | | |
| Active - yes | 21 (7) | - | - | 38 (13) | 0 | 8 (15) | 5 (10) | 12 (4) | 14 (5) |
| *Missing* | *0* | | | *10 (3)* | *0* | *0* | *93 (65)* | *0* | *0* |
| Passive - yes | - | - | 82 (28) | 116 (42) | 23 (25) | 11 (21) | - | 82 (6) | 80 (27) |
| *Missing* | | | *2 (0.7)* | *20 (7)* | *0* | *0* | | *2 (0.7)* | *3 (1)* |
| **Alcohol** - yes | 86 (32) | - | - | 290 (99) | - | 20 (38) | - | 170 (58) | 114 (38) |
| *Missing* | *34 (11)* | | | *7 (2)* | | *0* | | *5 (2)* | *1 (0.3)* |
| **Occupation** - yes | 0 | 0 | 0 | 0 | - | 0 | 124 (88) | 0 | 0 |
| *Missing* | *0* | *0* | *0* | *0* | | *0* | *2 (1)* | *3 (1)* | *0* |
| **Household** | | | | | | | | | |
| **Educational level of household** | | | | | | | | | |
| Low (ISCED 0-2) | 23 (8) | 0 | 20 (7) | 52 (18) | 21 (22) | 0 | 10 (7) | 20 (7) | 16 (5) |
| Medium (ISCED 3-4) | 103 (34) | 11 (7) | 214 (78) | 83 (29) | 33 (35) | 17 (33) | 66 (46) | 110 (37) | 100 (33) |
| High (ISCED >=5) | 174 (58) | 151 (93) | 40 (15) | 154 (53) | 40 (43) | 35 (67) | 67 (47) | 170 (56) | 184 (62) |
| *Missing* | *0* | *0* | *18 (6)* | *10 (3)* | *0* | *0* | *0* | *0* | *0* |
| **Recent renovation** - yes | - | 50 (33) | 10 (3) | 191 (67 ) | 63 (67) | 20 (38) | 49 (44) | - | 109 (37) |
| *Missing* | | *26 (15)* | *1 (0.3)* | *15 (5)* | *0* | *0* | *32 (22)* | | *7 (2)* |
| **Degree of urbanization** | | | | | | | | | |
| Cities | 111 (37) | 44 (25) | 0 | 256 (86) | 0 | 38 (73) | 42 (29) | 84 (28) | 45 (15) |
| Towns and suburbs | 137 (46) | 79 (45) | 128 (44) | 36 (12) | 0 | 10 (19) | 34 (24) | 117 (39) | 209 (70) |
| Rural areas | 52 (17) | 53 (30) | 163 (56) | 7 (2) | 94 (100) | 4 (8) | 67 (47) | 99 (33) | 46 (15) |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Missing* | *0* | *1 (0.6)* | *1 (0.3)* | *0* | *0* | *0* | *0* | *0* | *0* |

**Table S4 Frequency of food consumption and the main source of drinking water in teenagers of the HBM4EU Aligned Studies (2014-2021)**

| Study | Riksmaten Adolescents n=300 | NEB II n=177 | PCB cohort follow-up n=292 | BEA n=299 | SLO CRP n=94 | CROME n=52 | ESTEBAN n=143 | GerES V-sub n=300 | FLEHS IV n=300 |
|---|---|---|---|---|---|---|---|---|---|
| **Consumption** | n (%) | | | | | | | | |
| **Drinking water** | | | | | | | | | |
| Botted | - | 0 | 1 (0.3) | 107 (35) | 11 (12) | 0 | 22 (16) | - | 0 |
| Tap | | 170 (100) | 289 (99) | 135 (45) | 71 (75) | 52 (100) | 93 (68) | | 0 |
| Ground | | 0 | 2 (0.7) | 2 (1) | 12 (13) | 0 | 6 (4) | | 2 |
| Other | | 0 | 0 | 55 (18) | 0 | 0 | 15 (11) | | 0 |
| *Missing* | | *7 (4)* | *0* | *0* | *0* | *0* | *7 (5)* | | *298 (99)* |
| **Drinking water - source** | | | | | | | | | |
| Public | 257 (87) | 157 (90) | 289 (99) | 254 (98) | 82 (87) | 52 (100) | - | 296 (100) | 101 (98) |
| Private well | 39 (13) | 18 (10) | 2 (1) | 3 (1) | 10 (11) | 0 | | 0 | 1 (1) |
| Both | 0 | 0 | 0 | 2 (1) | 2 (2) | 0 | | 0 | 1 (1) |
| *Missing* | *4 (1)* | *2 (1)* | *1 (0.3)* | *40 (13)* | *0* | *0* | | *4 (1)* | *197 (66)* |
| **Food consumption** | | | | | | | | | |
| **Fish** | | | | | | | | | |
| never | 1 (0.4) | 0 | 70 (24) | 17 (6) | 14 (15) | 2 (4) | 11 (8) | 72 (24) | 0 |
| < 1x/month | 5 (1.8) | 6 (4) | 216 (74) | 9 (3) | 16 (17) | 4 (8) | 23 (17) | 0 | 0 |
| ≤ 1x/week but ≥ 1x/month | 153 (56.8) | 21 (14) | 5 (2) | 47 (16) | 57 (61) | 23 (44) | 91 (69) | 217 (73) | 212 (88) |
| 2-3x/week | 80 (30) | 108 (72) | 0 | 103 (34) | 6 (6) | 19 (36) | 6 (5) | 10 (3) | 0 |
| 4-6x/week | 24 (9) | 13 (9) | 0 | 107 (36) | 1 (1) | 4 (8) | 1 (1) | 0 | 0 |
| ≥ 7x/week | 6 (2) | 1 (1) | 0 | 15 (5) | 0 | 0 | 0 | 0 | 30 (12) |
| *Missing* | *31 (10)* | *28 (16)* | *1 (0.3)* | *1 (0.3)* | *0* | *0* | *11 (8)* | *1 (0.3)* | *58 (19)* |
| **Seafood** | | | | | | | | | |
| never | 0 | 0 | - | 13 (4) | 41 (44) | 22 (42) | 2 (1) | 67 (22.4) | 0 |
| < 1x/month | 2 (1) | 8 (5) | | 11 (4) | 22 (23) | 12 (23) | 14 (11) | 0 | 0 |
| ≤ 1x/week but ≥ 1x/month | 133 (49) | 21 (14) | | 44 (15) | 31 (33) | 16 (31) | 87 (66) | 221 (74) | 188 (63) |
| 2-3x/week | 92 (34) | 104 (69) | | 104 (35) | 0 | 2 (4) | 26 (20) | 10 (3.3) | 78 (26) |
| 4-6x/week | 35 (13) | 16 (11) | | 110 (37) | 0 | 0 | 3 (2) | 0 | 0 |
| ≥ 7x/week | 7 (3) | 2 (1) | | 16 (5) | 0 | 0 | 0 | 1 (0.3) | 34 (11) |
| *Missing* | *31 (10)* | *26 (15)* | | *1 (0.3)* | *0* | *0* | *11 (8)* | *1 (0.3)* | *0* |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Meat** | | | | | | | | | |
| never | - | 0 | 0 | 6 (2) | 0 | 0 | 0 | 13 (4) | 0 |
| < 1x/month | | 0 | 86 (29.5) | 3 (1) | 0 | 0 | 2 (1) | 0 | 0 |
| ≤ 1x/week but ≥ 1x/month | | 3 (2) | 205 (70.2) | 8 (3) | 0 | 8 (15) | 5 (4) | 94 (32) | 9 (3) |
| 2-3x/week | | 31 (21) | 1 (0.3) | 43 (15) | 15 (16) | 24 (46) | 26 (20) | 86 (29) | 15 (5) |
| 4-6x/week | | 89 (59) | 0 | 150 (51) | 45 (48) | 19 (37) | 43 (33) | 34 (11) | 14 (5) |
| ≥ 7x/week | | 28 (18) | 0 | 84 (29) | 34 (36) | 1 (2) | 55 (42) | 70 (24) | 262 (87) |
| *Missing* | | *26 (15)* | *0* | *5 (2)* | *0* | *0* | *12 (8)* | *3 (1)* | *0* |
| **Offal** | | | | | | | | | |
| never | - | 0 | 113 (39) | - | 68 (72) | 40 (77) | 82 (62) | 290 (97) | 277 (92) |
| < 1x/month | | 142 (94) | 170 (58) | | 11 (12) | 9 (17) | 33 (25) | 0 | 0 |
| ≤ 1x/week but ≥ 1x/month | | 6 (4) | 8 (3) | | 14 (15) | 3 (6) | 17 (13) | 9 (3) | 19 (6) |
| 2-3x/week | | 3 (2) | 0 | | 1 (1) | 0 | 0 | 0 | 4 (2) |
| 4-6x/week | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| ≥ 7x/week | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| *Missing* | | *26 (15)* | *1 (0.3)* | | *0* | *0* | *11 (8)* | *1 (0.3)* | *0* |
| **Milk and dairy products** | | | | | | | | | |
| never | - | 0 | 1 (0.3) | 1 (0.3) | 0 | 7 (13) | 10 (8) | 22 (7) | 9 (3) |
| < 1x/month | | 3 (2) | 26 (9) | 1 (0.3) | 0 | 2 (4) | 2 (1) | 0 | 0 |
| ≤ 1x/week but ≥ 1x/month | | 0 | 257 (88) | 5 (1.7) | 1 (1) | 3 (6) | 20 (15) | 81 (27) | 36 (12) |
| 2-3x/week | | 4 (3) | 8 (2.7) | 20 (7) | 7 (8) | 11 (21) | 14 (11) | 31 (11) | 65 (22) |
| 4-6x/week | | 11 (7) | 0 | 64 (21.7) | 19 (20) | 11 (21) | 10 (8) | 30 (10) | 46 (15) |
| ≥ 7x/week | | 134 (88) | 0 | 204 (69) | 67 (71) | 18 (35) | 76 (57) | 132 (45) | 144 (48) |
| *Missing* | | *25 (14)* | *0* | *4 (1)* | *0* | *0* | *11 (8)* | *4 (1)* | *0* |
| **Eggs** | | | | | | | | | |
| never | - | 0 | 2 (1) | - | 1 (1) | 4 (8) | 6 (4) | 20 (6) | 6 (2) |
| < 1x/month | | 31 (20) | 81 (28) | | 1 (1) | 4 (8) | 6 (4) | 0 | 0 |
| ≤ 1x/week but ≥ 1x/month | | 41 (28) | 206 (70) | | 35 (37) | 8 (14) | 97 (74) | 248 (84) | 135 (45) |
| 2-3x/week | | 64 (42) | 3 (1) | | 41 (44) | 16 (31) | 22 (17) | 23 (8) | 142 (47) |
| 4-6x/week | | 14 (9) | 0 | | 12 (13) | 16 (31) | 1 (1) | 3 (1) | 14 (5) |
| ≥ 7x/week | | 1 (1) | 0 | | 4 (4) | 4 (8) | 0 | 2 (1) | 3 (1) |
| *Missing* | | *26 (15)* | *0* | | *0* | *0* | *11 (8)* | *4 (1)* | *0* |
| **Fast food** | | | | | | | | | |
| never | - | 0 | 25 (8) | 38 (13) | 2 (2) | 6 (12) | 47 (35) | 12 (4) | - |
| < 1x/month | | 103 (68) | 255 (88) | 23 (8) | 16 (17) | 11 (21) | 0 | 0 | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ≤ 1x/week but ≥ 1x/month | | 48 (32) | 11 (4) | 78 (26) | 74 (79) | 24 (46) | 79 (58) | 214 (72) | |
| 2-3x/week | | 0 | 0 | 105 (35) | 2 (2) | 9 (17) | 0 | 69 (23) | |
| 4-6x/week | | 0 | 0 | 47 (16) | 0 | 2 (4) | 9 (7) | 0 | |
| ≥ 7x/week | | 0 | 0 | 6 (2) | 0 | 0 | 0 | 4 (1) | |
| *Missing* | | *26 (15)* | *1 (0.3)* | *2 (1)* | *0* | *0* | *8 (5)* | *1 (0.3)* | |
| **Local food** | | | | | | | | | |
| never | - | - | 68 (23) | - | 0 | 0 | - | - | 125 (42) |
| < 1x/month | | | 224 (77) | | 2 (2) | 0 | | | 0 |
| ≤ 1x/week but ≥ 1x/month | | | 0 | | 0 | 0 | | | 0 |
| 2-3x/week | | | 0 | | 4 (4) | 0 | | | 0 |
| 4-6x/week | | | 0 | | 6 (7) | 0 | | | 0 |
| ≥ 7x/week | | | 0 | | 82 (87) | 52 (100) | | | 173 (58) |
| *Missing* | | | *0* | | *0* | *0* | | | *2 (0.6)* |

**Table S5 Results of multiple linear regression for PFAS and fish and seafood consumption**

| PFOS | | | | |
|---|---|---|---|---|
| **n** = 1783 | **Variable** | **Beta (95% CI)** | **Estimate (95% CI)** | **p - value** |
| **Adj. R²** = 0.215 | Boys | 0.151 (0.095; 0.208) | 1.163 (1.100; 1.231) | <0.001 |
| | Riksmaten Ungdom | 0.153 (0.026; 0.281) | 1.165 (1.026; 1.324) | 0.019 |
| | NEB II | 0.037 (-0.118; 0.191) | 1.038 (0.889; 1.210) | 0.641 |
| | PCB cohort follow-up | -0.338 (-0.466; -0.210) | 0.713 (0.628; 0.811) | <0.001 |
| | BEA | -0.631 (-0.763; -0.499) | 0.532 (0.466; 0.607) | <0.001 |
| | SLO-CRP | -0.182 (-0.343; -0.021) | 0.834 (0.710; 0.979) | 0.027 |
| | CROME | -0.070 (-0.265; 0.125) | 0.932 (0.767; 1.133) | 0.482 |
| | ESTEBAN | Ref. | | |
| | GerES V | 0.158 (0.026; 0.281) | 1.171 (1.026; 1.324) | 0.013 |
| | FLEHS IV | -0.063 (-0.192; 0.065) | 0.939 (0.825; 1.067) | 0.334 |
| | Educational level of household – medium | -0.101 (-0.166; -0.037) | 0.904 (0.847; 0.964) | 0.002 |
| | Educational level of household – low | -0.334 (-0.440; -0.228) | 0.716 (0.644; 0.796) | <0.001 |
| | Seafood and fish consumption ≥2x/week | 0.190 (0.113; 0.267) | 1.209 (1.120; 1.306) | <0.001 |
| | | | | |
| PFOA | | | | |
| **n** = 1783 | **Variable** | **Beta (95% CI)** | **Estimate (95% CI)** | **p - value** |
| **Adj. R²** = 0.293 | Boys | 0.116 (0.073; 0.160) | 1.123 (1.076; 1.174) | <0.001 |
| | Riksmaten Ungdom | -0.298 (-0.396; -0.199) | 0.742 (0.673; 0.820) | <0.001 |
| | NEB II | -0.211 (-0.329; -0.092) | 0.810 (0.720; 0.912) | 0.001 |
| | PCB cohort follow-up | -0.803 (-0.902; -0.704) | 0.448 (0.406 0.495) | <0.001 |
| | BEA | -0.859 (-0.960; -0.757) | 0.424 (0.383; 0.469) | <0.001 |
| | SLO-CRP | -0.523 (-0.647; -0.399) | 0.593 (0.524; 0.671) | <0.001 |
| | CROME | -0.478 (-0.628; -0.328) | 0.620 (0.534; 0.720) | <0.001 |
| | ESTEBAN | Ref. | | |
| | GerES V | -0.255 (-0.351; -0.159) | 0.775 (0.704; 0.853) | <0.001 |
| | FLEHS IV | -0.344 (-0.443; -0.246) | 0.709 (0.642; 0.782) | <0.001 |
| | Educational level of household – medium | -0.057 (-0.107; -0.007) | 0.945 (0.899; 0.993) | 0.025 |
| | Educational level of household – low | -0.220 (-0.301; -0.139) | 0.803 (0.740 0.870) | <0.001 |
| | Seafood and fish consumption ≥2x/week | 0.041 (-0.018; 0.101) | 1.042 (0.982; 1.106) | 0.170 |
| | | | | |
| PFHxS | | | | |
| **n** = 1495 | **Variable** | **Beta (95% CI)** | **Estimate (95% CI)** | **p - value** |
| **Adj. R²** = 0.190 | Boys | 0.228 (0.163; 0.293) | 1.256 (1.177; 1.340) | <0.001 |
| | Riksmaten Ungdom | -0.724 (-0.859; -0.589) | 0.485 (0.424; 0.555) | <0.001 |
| | NEB II | -0.539 (-0.704; -0.373) | 0.583 (0.495; 0.689) | <0.001 |
| | PCB cohort follow-up | -0.832 (-0.968; -0.696) | 0.435 (0.380; 0.499) | <0.001 |
| | BEA | - | | - |
| | SLO-CRP | -1.172 (-1.342; -1.001) | 0.310 (0.261; 0.368) | <0.001 |
| | CROME | -0.998 (-1.204; -0.792) | 0.369 (0.300; 0.453) | <0.001 |
| | ESTEBAN | Ref. | | |
| | GerES V | -0.734 (-0.866; -0.602) | 0.480 (0.421; 0.548) | <0.001 |
| | FLEHS IV | -0.436 (-0.572; -0.301) | 0.647 (0.564; 0.740) | <0.001 |
| | Educational level of household – medium | -0.080 (-0.154; -0.005) | 0.923 (0.857; 0.995) | 0.036 |

| | | | | |
|---|---|---|---|---|
| | Educational level of household – low | -0.180 (-0.313; -0.046) | 0.835 (0.731; 0.955) | 0.008 |
| | Seafood and fish consumption ≥2x/week | 0.089 (-0.002; 0.180) | 1.093 (0.998; 1.197) | 0.055 |
| | | | | |
| **PFNA** | | | | |
| **n** = 1484 | **Variable** | **Beta (95% CI)** | **Estimate (95% CI)** | **p - value** |
| **Adj. R$^2$** = 0.332 | Boys | 0.144 (0.076; 0.211) | 1.155 (1.079; 1.235) | <0.001 |
| | Riksmaten Ungdom | -0.496 (-0.635; -0.356) | 0.609 (0.530; 0.700) | <0.001 |
| | NEB II | -0.390 (-0.560; -0.221) | 0.677 (0.571; 0.802) | <0.001 |
| | PCB cohort follow-up | -1.383 (-1.523; -1.243) | 0.251 (0.218; 0.289) | <0.001 |
| | BEA | -0.750 (-0.894; -0.605) | 0.472 (0.409; 0.546) | <0.001 |
| | SLO-CRP | -0.727 (-0.903; -0.551) | 0.483 (0.405; 0.576) | <0.001 |
| | CROME | -0.382 (-0.595; -0.170) | 0.682 (0.552; 0.844) | <0.001 |
| | ESTEBAN | Ref. | | |
| | GerES V | - | | - |
| | FLEHS IV | -0.607 (-0.748; -0.467) | 0.545 (0.473; 0.627) | <0.001 |
| | Educational level of household – medium | -0.067 (-0.145; 0.012) | 0.935 (0.865; 1.012) | 0.098 |
| | Educational level of household – low | -0.511 (-0.636; -0.387) | 0.600 (0.529; 0.679) | <0.001 |
| | Seafood and fish consumption ≥2x/week | 0.182 (0.096; 0.268) | 1.200 (1.101; 1.307) | <0.001 |

Reference: Sex - girls; Study - ESTEBAN; Educational level of household - high; Seafood and fish consumption - < 2x/week

**Table S6 Results of multiple linear regression for PFAS and eggs consumption**

| PFOS | | | | |
|---|---|---|---|---|
| **n** = 1284 | **Variable** | **Beta (95% CI)** | **Estimate (95% CI)** | **p - value** |
| **Adj. R²** = 0.125 | Boys | 0.144 (0.075; 0.214) | 1.155 (1.078; 1.239) | <0.001 |
| | Riksmaten Ungdom | - | | - |
| | NEB II | 0.141 (-0.017; 0.299) | 1.151 (0.983; 1.349) | 0.080 |
| | PCB cohort follow-up | -0.375 (-0.508; -0.241) | 0.687 (0.602; 0.786) | <0.001 |
| | BEA | - | | - |
| | SLO-CRP | -0.254 (-0.426; -0.081) | 0.776 (0.653; 0.922) | 0.004 |
| | CROME | -0.076 (-0.284; 0.132) | 0.927 (0.753;1.141) | 0.475 |
| | ESTEBAN | Ref. | | |
| | GerES V | 0.134 (0.004; 0.263) | 1.143 (1.004; 1.301) | 0.043 |
| | FLEHS IV | -0.068 (-0.201; 0.065) | 0.934 (0.818; 1.067) | 0.318 |
| | Educational level of household – medium | -0.056 (-0.136; 0.025) | 0.946 (0.873; 1.025) | 0.175 |
| | Educational level of household – low | -0.316 (-0.463; -0.170) | 0.729 (0.629; 0.844) | <0.001 |
| | Eggs consumption ≥2x/week | 0.107 (0.017; 0.196) | 1.113 (1.017; 1.217) | 0.020 |
| | | | | |
| **PFOA** | | | | |
| **n** = 1284 | **Variable** | **Beta (95% CI)** | **Estimate (95% CI)** | **p - value** |
| **Adj. R²** = 0.243 | Boys | 0.139 (0.085; 0.193) | 1.149 (1.089; 1.213) | <0.001 |
| | Riksmaten Ungdom | - | | - |
| | NEB II | -0.188 (-0.311; -0.064) | 0.829 (0.733; 0.938) | 0.003 |
| | PCB cohort follow-up | -0.811 (-0.915; -0.706) | 0.444 (0.401; 0.494) | <0.001 |
| | BEA | - | | - |
| | SLO-CRP | -0.528 (-0.663; -0.393) | 0.590 (0.515; 0.675) | <0.001 |
| | CROME | -0.474 (-0.637; -0.311) | 0.623 (0.529; 0.733) | <0.001 |
| | ESTEBAN | Ref. | | |
| | GerES V | -0.264 (-0.365; -0.163) | 0.768 (0.694 0.850) | <0.001 |
| | FLEHS IV | -0.345 (-0.449; -0.240) | 0.708 (0.638; 0.787) | <0.001 |
| | Educational level of household – medium | -0.067 (-0.130; -0.004) | 0.935 (0.878; 0.996) | 0.037 |
| | Educational level of household – low | -0.244 (-0.359; -0.130) | 0.783 (0.698; 0.878) | <0.001 |
| | Eggs consumption ≥2x/week | -0.003 (-0.073; 0.067) | 0.997 (0.930; 1.069) | 0.930 |
| | | | | |
| **PFHxS** | | | | |
| **n** = 1284 | **Variable** | **Beta (95% CI)** | **Estimate (95% CI)** | **p - value** |
| **Adj. R²** = 0.226 | Boys | 0.245 (0.178; 0.313) | 1.278 (1.195; 1.368) | <0.001 |
| | Riksmaten Ungdom | - | | - |
| | NEB II | -0.447 (-0.601; -0.292) | 0.640 (0.548; 0.747) | <0.001 |
| | PCB cohort follow-up | -0.868 (-0.999; -0.737) | 0.420 (0.368; 0.479) | <0.001 |
| | BEA | - | | - |
| | SLO-CRP | -1.180 (-1.348 -1.012) | 0.307 (0.260; 0.363) | <0.001 |
| | CROME | -0.964 (-1.168; -0.761) | 0.381 (0.311; 0.467) | <0.001 |
| | ESTEBAN | Ref. | | |
| | GerES V | -0.738 (-0.864; -0.611) | 0.478 (0.421; 0.543) | <0.001 |
| | FLEHS IV | -0.421 (-0.551; -0.290) | 0.656 (0.576; 0.748) | <0.001 |
| | Educational level of household – medium | -0.036 (-0.114; 0.043) | 0.965 (0.892; 1.044) | 0.374 |

| | | Beta (95% CI) | Estimate (95% CI) | p - value |
|---|---|---|---|---|
| | Educational level of household – low | -0.149 (-0.292; -0.006) | 0.862 (0.747; 0.994) | 0.041 |
| | Eggs consumption ≥2x/week | -0.017 (-0.105; 0.071) | 0.983 (0.900; 1.074) | 0.704 |
| | | | | |
| **PFNA** | | | | |
| **n** = 988 | **Variable** | **Beta (95% CI)** | **Estimate (95% CI)** | **p - value** |
| **Adj. R²** = 0.371 | Boys | 0.207 (0.117; 0.298) | 1.230 (1.124; 1.347) | <0.001 |
| | Riksmaten Ungdom | - | | - |
| | NEB II | -0.340 (-0.523; -0.158) | 0.712 (0.593; 0.854) | <0.001 |
| | PCB cohort follow-up | -1.395 (-1.549; -1.241) | 0.248 (0.212; 0.289) | <0.001 |
| | BEA | - | | - |
| | SLO-CRP | -0.787 (-0.985; -0.588) | 0.455 (0.373; 0.555) | <0.001 |
| | CROME | -0.438 (-0.677; -0.198) | 0.645 (0.508; 0.820) | <0.001 |
| | ESTEBAN | Ref. | | |
| | GerES V | - | | - |
| | FLEHS IV | -0.644 (-0.797; -0.491) | 0.525 (0.451; 0.612) | <0.001 |
| | Educational level of household – medium | -0.079 (-0.188; 0.029) | 0.924 (0.829; 1.029) | 0.151 |
| | Educational level of household – low | -0.736 (-0.930; -0.542) | 0.479 (0.395; 0.582) | <0.001 |
| | Eggs consumption ≥2x/week | 0.132 (0.021; 0.242) | 1.141 (1.021; 1.274) | 0.019 |

Reference: Sex - girls; Study - ESTEBAN; Educational level of household - high; Eggs consumption - < 2x/week

**Table S7 Results of multiple linear regression for PFAS and offal consumption**

| PFOS | | | | |
|---|---|---|---|---|
| **n** = 1287 | **Variable** | **Beta (95% CI)** | **Estimate (95% CI)** | **p - value** |
| **Adj. R²** = 0.126 | Boys | 0.137 (0.067; 0.206) | 1.147 (1.069; 1.229) | <0.001 |
| | Riksmaten Ungdom | - | | - |
| | NEB II | 0.094 (-0.073; 0.262) | 1.099 (0.930; 1.300) | 0.269 |
| | PCB cohort follow-up | -0.418 (-0.553; -0.283) | 0.658 (0.575; 0.754) | <0.001 |
| | BEA | - | | - |
| | SLO-CRP | -0.195 (-0.363; -0.027) | 0.823 (0.696; 0.973) | 0.023 |
| | CROME | -0.002 (-0.205; 0.201) | 0.998 (0.815; 1.223) | 0.985 |
| | ESTEBAN | Ref. | | |
| | GerES V | 0.171 (0.037; 0.304) | 1.186 (1.038; 1.355) | 0.012 |
| | FLEHS IV | 0.008 (-0.125; 0.141) | 1.008 (0.882; 1.151) | 0.906 |
| | Educational level of household – medium | -0.066 (-0.146; 0.014) | 0.936 (0.864; 1.014) | 0.107 |
| | Educational level of household – low | -0.315 (-0.461; -0.168) | 0.730 (0.631 0.845) | <0.001 |
| | Offal consumption ≥2x/week | 0.128 (0.028; 0.227) | 1.137 (1.028; 1.255) | 0.012 |
| | | | | |
| **PFOA** | | | | |
| **n** = 1287 | **Variable** | **Beta (95% CI)** | **Estimate (95% CI)** | **p - value** |
| **Adj. R²** = 0.242 | Boys | 0.137 (0.083; 0.192) | 1.147 (1.087; 1.212) | <0.001 |
| | Riksmaten Ungdom | - | | - |
| | NEB II | -0.201 (-0.332; -0.070) | 0.818 (0.717; 0.932) | 0.003 |
| | PCB cohort follow-up | -0.812 (-0.918; -0.707) | 0.444 (0.399; 0.493) | <0.001 |
| | BEA | - | | - |
| | SLO-CRP | -0.528 (-0.660; -0.396) | 0.590 (0.517; 0.673) | <0.001 |
| | CROME | -0.474 (-0.633; -0.315) | 0.623 (0.531; 0.730) | <0.001 |
| | ESTEBAN | Ref. | | |
| | GerES V | -0.260 (-0.365; -0.155) | 0.771 (0.694; 0.856) | <0.001 |
| | FLEHS IV | -0.341 (-0.445; -0.237) | 0.711 (0.641; 0.789) | <0.001 |
| | Educational level of household – medium | -0.072 (-0.134; -0.009) | 0.931 (0.875; 0.991) | 0.026 |
| | Educational level of household – low | -0.247 (-0.361; -0.132) | 0.781 (0.697; 0.876) | <0.001 |
| | Offal consumption ≥2x/week | 0.017 (-0.061; 0.095) | 1.017 (0.941; 1.100) | 0.676 |
| | | | | |
| **PFHxS** | | | | |
| **n** = 1287 | **Variable** | **Beta (95% CI)** | **Estimate (95% CI)** | **p - value** |
| **Adj. R²** = 0.224 | Boys | 0.241 (0.173; 0.309) | 1.273 (1.189; 1.362) | <0.001 |
| | Riksmaten Ungdom | - | | - |
| | NEB II | -0.437 (-0.601; -0.273) | 0.646 (0.548; 0.761) | <0.001 |
| | PCB cohort follow-up | -0.860 (-0.992; -0.728) | 0.423 (0.371; 0.483) | <0.001 |
| | BEA | - | | - |
| | SLO-CRP | -1.190 (-1.355; -1.024) | 0.304 (0.258; 0.359) | <0.001 |
| | CROME | -0.976 (-1.175; -0.777) | 0.377 (0.309; 0.460) | <0.001 |
| | ESTEBAN | Ref. | | |
| | GerES V | -0.756 (-0.887; -0.625) | 0.470 (0.412; 0.535) | <0.001 |
| | FLEHS IV | -0.434 (-0.564; -0.303) | 0.648 (0.569; 0.739) | <0.001 |
| | Educational level of household – medium | -0.035 (-0.113; 0.044) | 0.966 (0.893; 1.045) | 0.389 |

| | Variable | Beta (95% CI) | Estimate (95% CI) | p - value |
|---|---|---|---|---|
| | Educational level of household – low | -0.147 (-0.290; -0.003) | 0.863 (0.748; 0.997) | 0.045 |
| | Offal consumption ≥2x/week | -0.024 (-0.122; 0.074) | 0.976 (0.885; 1.077) | 0.628 |
| | | | | |
| **PFNA** | | | | |
| **n** = 988 | **Variable** | **Beta (95% CI)** | **Estimate (95% CI)** | **p - value** |
| **Adj. R$^2$** = 0.374 | Boys | 0.199 (0.108; 0.290) | 1.220 (1.114; 1.336) | <0.001 |
| | Riksmaten Ungdom | - | | - |
| | NEB II | -0.333 (-0.527; -0.138) | 0.717 (0.590; 0.871) | 0.001 |
| | PCB cohort follow-up | -1.426 (-1.581; -1.270) | 0.240 (0.206; 0.281) | <0.001 |
| | BEA | - | | - |
| | SLO-CRP | -0.725 (-0.919; -0.531) | 0.484 (0.399; 0.588) | <0.001 |
| | CROME | -0.361 (-0.595 -0.128) | 0.697 (0.552; 0.880) | 0.002 |
| | ESTEBAN | Ref. | | |
| | GerES V | - | | - |
| | FLEHS IV | -0.581 (-0.734; -0.429) | 0.559 (0.480; 0.651) | <0.001 |
| | Educational level of household – medium | -0.091 (-0.199; 0.018) | 0.913 (0.820; 1.018) | 0.103 |
| | Educational level of household – low | -0.733 (-0.928; -0.538) | 0.480 (0.395 0.584) | <0.001 |
| | Offal consumption - sometimes | 0.054 (-0.063; 0.172) | 1.055 (0.939; 1.188) | 0.364 |

Reference: Sex - girls; Study - ESTEBAN; Educational level of household - high; Offal consumption - never

**Table S8 Results of multiple linear regression for PFAS and local food consumption**

| PFOS | | | | |
|---|---|---|---|---|
| **n** = 718 | **Variable** | **Beta (95% CI)** | **Estimate (95% CI)** | **p - value** |
| **Adj. R²** = 0.104 | Boys | 0.172 (0.069; 0.275) | 1.188 (1.071; 1.317) | 0.001 |
| | PCB cohort follow-up | -0.124 (-0.280; 0.032) | 0.883 (0.756; 1.033) | 0,119 |
| | SLO-CRP | -0.337 (-0.513; -0.161) | 0.714 (0.599; 0.851) | <0.001 |
| | CROME | -0.123 (-0.340; 0.093) | 0.884 (0.712; 1.097) | 0.265 |
| | VITO_FLEHS IV | Ref. | | |
| | Educational level of household – medium or low | -0.156 (-0.271; -0.041) | 0.856 (0.763; 0.960) | 0.008 |
| | Local food consumption ≥2x/week | 0.334 (0.175; 0.493) | 1.397 (1.191; 1.637) | <0.001 |
| | | | | |
| **PFOA** | | | | |
| **n** = 718 | **Variable** | **Beta (95% CI)** | **Estimate (95% CI)** | **p - value** |
| **Adj. R²** = 0.204 | Boys | 0.149 (0.079; 0.220) | 1.161 (1.082; 1.246) | <0.001 |
| | PCB cohort follow-up | -0.447 (-0.554; -0.341) | 0.640 (0.575; 0.711) | <0.001 |
| | SLO-CRP | -0.239 (-0.359; -0.119) | 0.787 (0.698; 0.888) | <0.001 |
| | CROME | -0.143 (-0.291; 0.005) | 0.867 (0.748; 1.005) | 0.057 |
| | VITO_FLEHS IV | Ref. | | |
| | Educational level of household – medium or low | -0.053 (-0.133; 0.026) | 0.948 (0.875; 1.026) | 0.188 |
| | Local food consumption ≥2x/week | 0.049 (-0.059; 0.158) | 1.050 (0.943; 1.171) | 0.373 |
| | | | | |
| **PFHxS** | | | | |
| **n** = 718 | **Variable** | **Beta (95% CI)** | **Estimate (95% CI)** | **p - value** |
| **Adj. R²** = 0.199 | Boys | 0.267 (0.174; 0.360) | 1.306 (1.190; 1.433) | <0.001 |
| | PCB cohort follow-up | -0.364 (-0.505; -0.223) | 0.695 (0.604; 0.800) | <0.001 |
| | SLO-CRP | -0.839 (-0.998; -0.679) | 0.432 (0.369; 0.507) | <0.001 |
| | CROME | -0.602 (-0.798; -0.406) | 0.548 (0.450; 0.666) | <0.001 |
| | VITO_FLEHS IV | Ref. | | |
| | Educational level of household – medium or low | -0.036 (-0.141; 0.069) | 0.965 (0.868; 1.071) | 0.504 |
| | Local food consumption ≥2x/week | 0.136 (-0.008; 0.280) | 1.146 (0.992; 1.323) | 0.064 |
| | | | | |
| **PFNA** | | | | |
| **n** = 718 | **Variable** | **Beta (95% CI)** | **Estimate (95% CI)** | **p - value** |
| **Adj. R²** = 0.239 | Boys | 0.195 (0.075; 0.315) | 1.215 (1.078; 1.370) | 0.001 |
| | PCB cohort follow-up | -0.682 (-0.863; -0.500) | 0.506 (0.422; 0.607) | <0.001 |
| | SLO-CRP | -0.283 (-0.488; -0.078) | 0.754 (0.614; 0.925) | 0.007 |
| | CROME | 0.188 (-0.064; 0.440) | 1.207 (0.938; 1.553) | 0.143 |
| | VITO_FLEHS IV | Ref. | | |
| | Educational level of household – medium or low | -0.209 (-0.343; -0.076) | 0.811 (0.710; 0.927) | 0.002 |
| | Local food consumption ≥2x/week | 0.157 (-0.028; 0.342) | 1.170 (0.972; 1.408) | 0.095 |

Reference: Sex - girls; Study – FLEHS IV; Educational level of household - high; Local food consumption - < 2x/week