**Supplementary Table 1. Comparison of inflammatory markers following 12 months of monthly supplementation with placebo or 750 μg or 1500 μg vitamin D3, within strata of sex, age, BMI, baseline serum 25(OH)D level and timing of blood collection relative to final tablet: Quantile regression. a**

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|  | **Placebo** | | |  | **750 μg vitamin D3** | | | | |  | **1500 μg vitamin D3** | | | | |  |  |
| **Variable** | **n** | **Median** | **IQR** |  | **n** | **Median** | **IQR** | **b** | **95% CI** |  | **n** | **Median** | **IQR** | **b** | **95% CI** | **P b** | **P-trend c** |
| ***Men*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CRP (mg/l) | 111 | 1.2 | 0.7–2.9 |  | 111 | 1.2 | 0.7–2.5 | 0.0 | -0.4, 0.4 |  | 106 | 1.4 | 0.8–3.5 | 0.2 | -0.2, 0.9 | 0.69 | 0.24 |
| Leptin (ng/ml) | 111 | 4.4 | 2.1–8.6 |  | 111 | 4.1 | 2.3–8.5 | -0.3 | -2.3, 0.9 |  | 106 | 5.0 | 2.4–8.7 | 0.6 | -1.1, 2.1 | 0.64 | 0.34 |
| Adiponectin (µg/ml) | 111 | 10.0 | 5.6–15.1 |  | 111 | 10.7 | 6.9–16.6 | 0.7 | -2.0, 3.0 |  | 106 | 9.6 | 6.4–14.4 | -0.3 | -2.3, 2.6 | 0.74 | 0.85 |
| LAR | 111 | 0.5 | 0.2–1.1 |  | 111 | 0.4 | 0.2–1.0 | -0.1 | -0.2, 0.1 |  | 106 | 0.6 | 0.3–1.2 | 0.1 | -0.1, 0.3 | 0.44 | 0.48 |
| IL-6 (pg/ml) | 109 | 4.1 | 1.6–7.5 |  | 111 | 4.2 | 1.6–10.3 | 2.8 | -1.7, 7.1 |  | 106 | 4.9 | 1.6–10.7 | 3.2 | 0.7, 6.0 | 0.07 | 0.09 |
| IL-10 (pg/ml) | 108 | 2.0 | 2.0–4.9 |  | 111 | 2.0 | 2.0–6.7 | 1.5 | -2.4, 5.6 |  | 103 | 2.0 | 2.0–3.3 | -1.9 | -4.0, 1.7 | 0.06 | 0.37 |
| ***Women*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CRP (mg/l) | 93 | 1.6 | 0.8–3.8 |  | 92 | 2.1 | 1.2–3.7 | 0.5 | -0.2, 1.0 |  | 99 | 1.5 | 0.9–3.3 | -0.1 | -0.8, 0.7 | 0.16 | 0.83 |
| Leptin (ng/ml) | 93 | 16.1 | 9.6–23.7 |  | 92 | 16.0 | 8.7–26.5 | 0.1 | -3.6, 3.8 |  | 99 | 14.9 | 8.7–24.8 | -1.2 | -5.4, 2.6 | 0.79 | 0.57 |
| Adiponectin (µg/ml) | 93 | 17.6 | 13.3–26.5 |  | 92 | 17.0 | 10.4–24.0 | -0.3 | -5.8, 2.5 |  | 99 | 16.4 | 11.1–27.3 | -1.2 | -5.8, 2.1 | 0.80 | 0.46 |
| LAR | 93 | 0.9 | 0.4–1.9 |  | 92 | 1.0 | 0.4–2.2 | 0.1 | -0.2, 0.4 |  | 99 | 1.0 | 0.3–2.1 | 0.1 | -0.2, 0.5 | 0.81 | 0.51 |
| IL-6 (pg/ml) | 93 | 3.5 | 1.6–9.1 |  | 91 | 4.6 | 1.6–9.6 | 0.5 | -4.8, 5.8 |  | 99 | 4.6 | 1.6–11.8 | 2.7 | -3.8, 9.4 | 0.75 | 0.39 |
| IL-10 (pg/ml) | 93 | 2.0 | 2.0–4.2 |  | 89 | 2.0 | 2.0–4.7 | 0.5 | -1.6, 4.3 |  | 97 | 2.0 | 2.0–4.6 | 0.4 | -1.5, 4.4 | 0.95 | 0.74 |
| ***Age < 70 years*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CRP (mg/l) | 92 | 1.1 | 0.6–2.9 |  | 94 | 1.7 | 1.0–3.6 | 0.5 | 0.2, 1.1 |  | 94 | 1.4 | 0.8–3.5 | 0.2 | -0.1, 1.2 | 0.15 | 0.33 |
| Leptin (ng/ml) | 91 | 8.2 | 2.7–17.0 |  | 94 | 9.8 | 2.6–18.3 | 1.5 | -1.7, 4.9 |  | 94 | 7.2 | 2.5–13.9 | -1.0 | -4.7, 1.8 | 0.34 | 0.36 |
| Adiponectin (µg/ml) | 91 | 13.4 | 7.9–20.0 |  | 94 | 11.4 | 7.5–17.7 | -2.0 | -4.3, 2.3 |  | 94 | 12.0 | 7.1–18.5 | -1.4 | -3.7, 2.4 | 0.38 | 0.44 |
| LAR | 91 | 0.7 | 0.3–1.5 |  | 94 | 0.8 | 0.4–1.6 | 0.1 | -0.1, 0.5 |  | 94 | 0.6 | 0.3–1.5 | -0.1 | -0.4, 0.2 | 0.17 | 0.52 |
| IL-6 (pg/ml) | 90 | 3.0 | 1.6–6.5 |  | 93 | 4.6 | 1.6–9.5 | 3.0 | -1.0, 7.7 |  | 94 | 4.6 | 1.6–11.6 | 5.1 | 1.5, 10.2 | 0.08 | 0.02 |
| IL-10 (pg/ml) | 90 | 2.0 | 2.0–4.2 |  | 92 | 2.0 | 2.0–5.8 | 0.8 | -1.5, 5.2 |  | 91 | 2.0 | 2.0–3.5 | -0.7 | -2.3, 3.4 | 0.70 | 0.73 |
| ***Age ≥ 70 years*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CRP (mg/l) | 112 | 1.6 | 0.8–3.8 |  | 109 | 1.2 | 0.7–2.5 | -0.4 | -0.8, 0.2 |  | 111 | 1.5 | 0.8–3.0 | -0.2 | -0.7, 0.5 | 0.43 | 0.92 |
| Leptin (ng/ml) | 113 | 8.2 | 3.4–17.9 |  | 109 | 6.3 | 3.0–15.8 | -1.9 | -5.9, 1.0 |  | 111 | 9.4 | 5.0–17.1 | 1.2 | -3.2, 3.8 | 0.15 | 0.38 |
| Adiponectin (µg/ml) | 113 | 13.9 | 8.3–21.1 |  | 109 | 14.4 | 8.3–20.5 | 0.6 | -2.6, 4.0 |  | 111 | 13.4 | 8.2–21.9 | -0.5 | -2.5, 1.6 | 0.79 | 0.73 |
| LAR | 113 | 0.6 | 0.2–1.5 |  | 109 | 0.4 | 0.2–1.4 | -0.1 | -0.3, 0.1 |  | 111 | 0.8 | 0.3–1.3 | 0.2 | 0.0, 0.5 | 0.05 | 0.27 |
| IL-6 (pg/ml) | 112 | 4.6 | 1.6–8.9 |  | 109 | 4.4 | 1.6–9.6 | 0.5 | -3.8, 4.4 |  | 111 | 4.7 | 1.6–10.2 | 1.1 | -3.6, 4.3 | 0.92 | 0.65 |
| IL-10 (pg/ml) | 111 | 2.0 | 2.0–4.5 |  | 108 | 2.0 | 2.0–5.3 | 0.7 | -2.8, 4.9 |  | 109 | 2.0 | 2.0–3.9 | -0.6 | -3.8, 2.7 | 0.75 | 0.52 |
| ***BMI < 25 kg/m2*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CRP (mg/l) | 61 | 1.2 | 0.7–2.5 |  | 73 | 1.2 | 0.6–2.6 | 0.1 | -0.2, 0.8 |  | 65 | 1.0 | 0.5–1.8 | -0.2 | -0.5, 0.2 | 0.52 | 0.77 |
| Leptin (ng/ml) | 61 | 3.2 | 2.0–7.7 |  | 73 | 4.3 | 2.1–9.2 | 1.1 | -1.1, 3.5 |  | 65 | 4.5 | 2.4–10.8 | 1.3 | -1.1, 3.5 | 0.50 | 0.25 |
| Adiponectin (µg/ml) | 61 | 16.5 | 10.6–23.2 |  | 73 | 16.6 | 10.8–22.3 | 0.2 | -4.4, 4.4 |  | 65 | 15.0 | 7.8–23.4 | -1.4 | -5.6, 2.2 | 0.80 | 0.54 |
| LAR | 61 | 0.3 | 0.1–0.5 |  | 73 | 0.3 | 0.1–0.7 | 0.0 | -0.1, 0.2 |  | 65 | 0.4 | 0.1–0.7 | 0.1 | 0.0, 0.3 | 0.29 | 0.07 |
| IL-6 (pg/ml) | 61 | 3.3 | 1.6–11.0 |  | 73 | 4.3 | 1.6–10.7 | -0.3 | -5.9, 6.9 |  | 65 | 3.7 | 1.6–8.7 | -2.3 | -9.0, 6.9 | 0.90 | 0.57 |
| IL-10 (pg/ml) | 61 | 2.0 | 2.0–5.2 |  | 72 | 2.0 | 2.0–7.1 | 1.7 | -4.1, 5.7 |  | 65 | 2.0 | 2.0–4.0 | -1.2 | -6.3, 5.0 | 0.47 | 0.51 |
| ***BMI ≥ 25 kg/m2*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CRP (mg/l) | 142 | 1.5 | 0.8–3.6 |  | 130 | 1.5 | 1.0–3.2 | 0.0 | -0.5, 0.5 |  | 140 | 2.0 | 1.0–3.8 | 0.4 | -0.1, 1.3 | 0.30 | 0.11 |
| Leptin (ng/ml) | 142 | 12.1 | 5.2–20.2 |  | 130 | 12.1 | 4.4–20.9 | 0.1 | -3.7, 4.7 |  | 140 | 10.4 | 5.5–19.0 | -1.7 | -4.7, 2.9 | 0.43 | 0.30 |
| Adiponectin (µg/ml) | 142 | 12.2 | 7.2–19.3 |  | 130 | 11.0 | 6.9–17.7 | -1.1 | -3.1, 1.4 |  | 140 | 11.9 | 7.8–17.7 | -0.2 | -2.2, 2.1 | 0.61 | 0.55 |
| LAR | 142 | 0.9 | 0.4–2.0 |  | 130 | 1.0 | 0.4–2.1 | 0.1 | -0.2, 0.5 |  | 140 | 1.0 | 0.4–1.7 | 0.1 | -0.2, 0.4 | 0.69 | 0.50 |
| IL-6 (pg/ml) | 140 | 4.2 | 1.6–7.1 |  | 129 | 4.6 | 1.6–8.4 | 1.2 | -1.5, 4.8 |  | 140 | 5.3 | 1.8–11.6 | 4.3 | 1.6, 7.8 | 0.02 | 0.01 |
| IL-10 (pg/ml) | 139 | 2.0 | 2.0–4.2 |  | 128 | 2.0 | 2.0–4.4 | 0.1 | -2.2, 3.8 |  | 135 | 2.0 | 2.0–3.5 | -0.7 | -2.0, 2.5 | 0.81 | 0.81 |

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| ***Baseline serum 25(OH)D < 30 nmol/l*** | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CRP (mg/l) | 36 | 2.1 | 0.8–4.4 |  | 39 | 1.7 | 0.9–3.5 | -0.3 | -2.0, 0.9 |  | 39 | 1.6 | 0.8–2.4 | -0.4 | -1.9, 0.7 | 0.82 | 0.44 |
| Leptin (ng/ml) | 36 | 12.8 | 7.1–22.5 |  | 39 | 8.1 | 3.8–15.8 | -4.6 | -12.2, 1.1 |  | 39 | 11.5 | 5.0–21.6 | -1.2 | -8.6, 3.5 | 0.22 | 0.35 |
| Adiponectin (µg/ml) | 36 | 14.2 | 10.0–22.3 |  | 39 | 14.3 | 7.4–18.4 | 0.1 | -6.0, 2.1 |  | 39 | 11.1 | 8.1–21.3 | -3.1 | -7.9, 1.8 | 0.36 | 0.34 |
| LAR | 36 | 0.9 | 0.5–1.8 |  | 39 | 0.7 | 0.2–1.6 | -0.3 | -0.8, 0.1 |  | 39 | 1.0 | 0.3–2.2 | 0.1 | -0.7, 0.6 | 0.57 | 0.87 |
| IL-6 (pg/ml) | 36 | 3.6 | 1.6–6.2 |  | 38 | 4.3 | 1.6–10.8 | 4.5 | -6.9, 19.0 |  | 39 | 3.7 | 1.6–10.2 | 3.9 | -7.7, 7.1 | 0.80 | 0.52 |
| IL-10 (pg/ml) | 36 | 2.3 | 2.0–5.9 |  | 38 | 2.0 | 2.0–7.3 | 0.8 | -4.7, 4.3 |  | 38 | 2.0 | 2.0–7.3 | 0.8 | -5.1, 5.8 | 0.95 | 0.75 |
| ***Baseline serum 25(OH)D ≥ 30 nmol/l*** | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CRP (mg/l) | 168 | 1.2 | 0.7–3.2 |  | 164 | 1.4 | 0.7–3.0 | 0.2 | -0.2, 0.6 |  | 165 | 1.4 | 0.8–3.8 | 0.1 | -0.2, 0.7 | 0.71 | 0.56 |
| Leptin (ng/ml) | 168 | 7.1 | 2.8–16.1 |  | 164 | 8.1 | 2.6–16.8 | 1.0 | -1.9, 3.8 |  | 165 | 7.6 | 3.4–14.9 | 0.5 | -1.4, 3.3 | 0.83 | 0.89 |
| Adiponectin (µg/ml) | 168 | 13.4 | 7.5–20.7 |  | 164 | 12.2 | 8.0–19.7 | -1.0 | -3.1, 2.5 |  | 165 | 13.0 | 7.8–19.3 | -0.3 | -2.4, 2.8 | 0.75 | 0.97 |
| LAR | 168 | 0.6 | 0.3–1.4 |  | 164 | 0.6 | 0.3–1.5 | 0.1 | -0.2, 0.3 |  | 165 | 0.7 | 0.3–1.3 | 0.1 | -0.1, 0.3 | 0.68 | 0.40 |
| IL-6 (pg/ml) | 166 | 4.1 | 1.6–8.2 |  | 164 | 4.6 | 1.6–9.5 | 1.2 | -1.2, 3.9 |  | 165 | 4.7 | 1.6–11.1 | 2.9 | 0.2, 6.9 | 0.27 | 0.11 |
| IL-10 (pg/ml) | 165 | 2.0 | 2.0–3.0 |  | 162 | 2.0 | 2.0–5.2 | 2.2 | -1.0, 4.4 |  | 161 | 2.0 | 2.0–3.7 | 0.7 | -1.7, 2.1 | 0.31 | 0.97 |
| ***Blood collection ≤ 7 days* d** | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CRP (mg/l) | 103 | 1.1 | 0.8–2.5 |  | 98 | 1.5 | 1.0–3.5 | 0.4 | 0.1, 1.1 |  | 107 | 1.4 | 0.8–3.0 | 0.3 | 0.0, 0.8 | 0.18 | 0.07 |
| Leptin (ng/ml) | 102 | 9.3 | 3.4–20.2 |  | 98 | 10.9 | 3.2–19.8 | 0.7 | -4.3, 5.9 |  | 107 | 8.9 | 4.4–15.1 | -0.8 | -5.0, 3.3 | 0.68 | 0.76 |
| Adiponectin (µg/ml) | 102 | 13.8 | 9.3–20.1 |  | 98 | 12.5 | 8.1–19.4 | -1.1 | -3.3, 2.4 |  | 107 | 12.3 | 7.7–20.3 | -1.4 | -3.8, 1.8 | 0.65 | 0.34 |
| LAR | 102 | 0.7 | 0.2–1.7 |  | 98 | 0.9 | 0.3–1.9 | 0.2 | -0.2, 0.5 |  | 107 | 0.8 | 0.3–1.4 | 0.0 | -0.2, 0.4 | 0.73 | 0.98 |
| IL-6 (pg/ml) | 103 | 4.1 | 1.6–7.5 |  | 98 | 4.6 | 1.6–9.1 | 1.6 | -2.7, 5.1 |  | 107 | 4.6 | 1.6–9.3 | 1.8 | -2.0, 5.4 | 0.64 | 0.39 |
| IL-10 (pg/ml) | 102 | 2.1 | 2.0–5.2 |  | 98 | 2.1 | 2.0–6.9 | 1.7 | -2.9, 5.1 |  | 106 | 2.0 | 2.0–4.0 | -1.2 | -3.3, 1.9 | 0.23 | 0.53 |

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| ***Blood collection > 7 days* d** | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CRP (mg/l) | 101 | 1.7 | 0.7–3.8 |  | 105 | 1.3 | 0.7–2.6 | -0.5 | -1.1, 0.1 |  | 98 | 1.4 | 0.8–3.8 | -0.3 | -1.0, 0.4 | 0.47 | 0.42 |
| Leptin (ng/ml) | 102 | 7.9 | 2.8–14.7 |  | 105 | 6.7 | 2.6–15.3 | -1.1 | -3.6, 2.1 |  | 98 | 7.6 | 2.5–16.9 | -0.1 | -4.0, 4.7 | 0.75 | 0.95 |
| Adiponectin (µg/ml) | 102 | 13.4 | 6.1–20.7 |  | 105 | 12.8 | 7.5–19.6 | -0.5 | -3.4, 2.0 |  | 98 | 12.8 | 7.9–19.6 | -0.3 | -2.6, 2.0 | 0.96 | 0.72 |
| LAR | 102 | 0.5 | 0.3–1.1 |  | 105 | 0.5 | 0.2–1.1 | 0.0 | -0.2, 0.2 |  | 98 | 0.6 | 0.3–1.3 | 0.0 | -0.2, 0.3 | 0.97 | 0.76 |
| IL-6 (pg/ml) | 99 | 3.0 | 1.6–8.2 |  | 104 | 4.2 | 1.6–10.0 | 2.1 | -1.1, 8.2 |  | 98 | 5.2 | 1.6–13.2 | 5.0 | 1.0, 10.5 | 0.26 | 0.17 |
| IL-10 (pg/ml) | 99 | 2.0 | 2.0–2.5 |  | 102 | 2.0 | 2.0–4.2 | 1.7 | -1.8, 4.7 |  | 94 | 2.0 | 2.0–3.2 | 0.7 | -1.7, 3.8 | 0.55 | 0.32 |

IQR, interquartile range; CRP, C-reactive protein; LAR, leptin-to-adiponectin ratio.

a For CRP, leptin, adiponectin and LAR, quantile regression coefficients (denoted **b**) represent the estimated difference in medians between the actively supplemented group (750 μg or 1500 μg) and the placebo group. For Il-6 and IL-10, **b** represents the estimated difference in 75th percentiles.

b P-value from the Wald test for intervention group treated as a categorical predictor (with 2 degrees of freedom), with the placebo group used as the reference level.

c P-trend from the Wald test for intervention group treated as a continuous variable (1 degree of freedom) with values 0, 1 and 2 corresponding to the placebo, 750 μg and 1500 μg groups, respectively.

d Time defined as the number of days between when the final tablet was taken and when the post-intervention blood sample was collected.