**Supplemental Table 1:** Vitamin D effects on CVD parameters in study participants with baseline 25-hydroxyvitamin D concentrations < 30 nmol/l

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | Baseline | Follow up | Treatment effect | *P*-value |
| Total cholesterol (mg/dl) a  Vitamin D  Placebo  LDL-cholesterol (mg/dl) a  Vitamin D  Placebo  HDL-cholesterol (mg/dl) a  Vitamin D  Placebo  Total-cholesterol/HDL-cholesterol (ratio) a  Vitamin D  Placebo  LDL-cholesterol/HDL-cholesterol (ratio) a  Vitamin D  Placebo  Triglycerides (mg/dl) a  Vitamin D  Placebo  Fetuin A (g/l) a  Vitamin D  Placebo  dp-ucMGP pmol/lb  Vitamin D  Placebo | 168 [138 to 187]  170 [144 to 202]  95 [69 to 114]  94 [65 to 120]  40 [31 to 44]  40 [30 to 55]  4.41 [3.78 to 4.82]  4.27 [3.31 to 5.90]  2.38 [2.16 to 2.84]  2.56 [1.91 to 3.11]  213 [137 to 269]  163 [123 to 281]  0.50 [0.40 to 0.60]  0.50 [0.40 to 0.60]  706 [290 to 1138]  371 [290 to 693] | 170 [141 to 201]  177 [157 to 210]  99 [82 to 113]  104 [82 to 135]  41 [31 to 48]  42 [34 to 53]  4.71 [3.69 to 5.32]  4.32 [3.78 to 5.21]  2.42 [2.11 to 3.20]  2.61 [2.18 to 3.14]  196 [153 to 283]  175 [123 to 242]  0.50 [0.30 to 0.60]  0.50 [0.40 to 0.60]  556 [319 to 1540]  290 [290 to 965] | -0.3 [-26.7 to 26.2]  -0.02 [-18.45 to 18.41]  -1.02 [-5.36 to 4.32]  0.23 [-0.30 to 0.76]  0.06 [-0.34 to 0.45]  0.2 [-67.4 to 67.8]  0.05 [-0.03 to 0.12]  28 [-400 to 457]- | 0.984  0.998  0.641  0.392  0.773  0.995  0.245  0.982 |

Abbreviations: LDL, low density lipoprotein; HDL, high density lipoprotein; dp-ucMGP, non-phosphorylated undercarboxylated matrix gla protein

aBased on 65 blood samples (29 samples from patients assigned to placebo and 36 samples from patients assigned to vitamin D).

bBased on 29 blood samples (14 samples from patients assigned to placebo and 15 samples from patients assigned to vitamin D).

**Supplemental Table 2:** Vitamin D effects on CVD parameters in diabetic study participants

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | Baseline | Follow up | Treatment effect | *P*-value |
| Total cholesterol (mg/dl) a  Vitamin D  Placebo  LDL-cholesterol (mg/dl) a  Vitamin D  Placebo  HDL-cholesterol (mg/dl) a  Vitamin D  Placebo  Total-cholesterol/HDL-cholesterol (ratio) a  Vitamin D  Placebo  LDL-cholesterol/HDL-cholesterol (ratio) a  Vitamin D  Placebo  Triglycerides (mg/dl) a  Vitamin D  Placebo  Fetuin A (g/l) a  Vitamin D  Placebo  dp-ucMGP pmol/lb  Vitamin D  Placebo | 157 [136 to 189]  169 [144 to 196]  91 [71 to 110]  95 [76 to 115]  41 [33 to 47]  43 [36 to 50]  4.12 [3.47 to 4.76]  4.02 [3.27 to 4.54]  2.26 [1.83 to 2.80]  2.28 [1.78 to 2.79]  198 [125 to 263]  165 [122 to 218]  0.50 [0.40 to 0.60]  0.50 [0.40 to 0.60]  337 [290 to 764]  290 [290 to 633] | 171 [140 to 195]  177 [149 to 203]  97 [76 to 117]  102 [80 to 123]  41 [34 to 48]  43 [34 to 51]  4.11 [3.36 to 4.95]  4.22 [3.64 to 4.84]  2.24 [1.89 to 2.92]  2.37 [1.99 to 2.91]  182 [118 to 255]  181 [130 to 227]  0.50 [0.40 to 0.60]  0.50 [0.40 to 0.60]  313 [290 to 670]  302 [290 to 599] | 9.6 [-24.5 to 43.7]  8.5 [-11.5 to 28.6]  1.84 [-4.82 to 8.50]  0.15 [-0.47 to 0.77]  0.12 [-0.28 to 0.53]  -39.6 [-144 to 64.9]  0.05 [-0.05 to 0.15]  392 [-498 to 1280]- | 0.570  0.394  0.447  0.622  0.538  0.318  0.318  0.363 |

Abbreviations: LDL, low density lipoprotein; HDL, high density lipoprotein; dp-ucMGP, non-phosphorylated undercarboxylated matrix gla protein

aBased on 37 blood samples (14 samples from patients assigned to placebo and 23 samples from patients assigned to vitamin D).

bBased on 18 blood samples (5 samples from patients assigned to placebo and 13 samples from patients assigned to vitamin D).

**Supplemental Table 3:** Vitamin D effects on CVD parameters in non-users of lipid-lowering drugs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | Baseline | Follow up | Treatment effect | *P*-value |
| Total cholesterol (mg/dl) a  Vitamin D  Placebo  LDL-cholesterol (mg/dl) a  Vitamin D  Placebo  HDL-cholesterol (mg/dl) a  Vitamin D  Placebo  Total-cholesterol/HDL-cholesterol (ratio) a  Vitamin D  Placebo  LDL-cholesterol/HDL-cholesterol (ratio) a  Vitamin D  Placebo  Triglycerides (mg/dl) a  Vitamin D  Placebo  Fetuin A (g/l) a  Vitamin D  Placebo  dp-ucMGP pmol/lb  Vitamin D  Placebo | 185 [152 to 223]  184 [166 to 213]  107 [91 to 130]  111 [94 to 121]  42 [36 to 49]  43 [38 to 50]  4.28 [3.63 to 5.17]  4.27 [3.93 to 5.39]  2.42 [2.18 to 3.01]  2.51 [2.27 to 3.15]  186 [115 to 252]  179 [129 to 220]  0.50 [0.40 to 0.60]  0.40 [0.38 to 0.68]  343 [290 to 849]  325 [290 to 752] | 179 [152 to 201]  189 [161 to 203]  111 [84 to 121]  115 [93 to 127]  42 [36 to 49]  44 [38 to 49]  4.39 [3.55 to 4.92]  4.27 [3.84 to 4.88]  2.38 [2.06 to 3.05]  2.53 [2.27 to 3.02]  176 [118 to 227]  178 [116 to 212]  0.50 [0.40 to 0.60]  0.50 [0.40 to 0.60]  463 [290 to 809]  290 [290 to 740] | 0.4 [-21.0 to 21.8]  1.5 [-13.5 to 16.4]  0.26 [-3.84 to 4.37]  0.07 [-0.34 to 0.48]  0.08 [-0.22 to 0.38]  -16.7 [-76.7 to 43.2]  0.01 [-0.05 to 0.07]  13 [-307 to 333]- | 0.970  0.845  0.899  0.733  0.593  0.579  0.789  0.933 |

Abbreviations: LDL, low density lipoprotein; HDL, high density lipoprotein; dp-ucMGP, non-phosphorylated undercarboxylated matrix gla protein

aBased on 70 blood samples (36 samples from patients assigned to placebo and 34 samples from patients assigned to vitamin D).

bBased on 37 blood samples (19 samples from patients assigned to placebo and 18 samples from patients assigned to vitamin D).

**Supplemental Table 4:** Vitamin D effects on CVD parameters in male study participants

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | Baseline | Follow up | Treatment effect | *P*-value |
| Total cholesterol (mg/dl) a  Vitamin D  Placebo  LDL-cholesterol (mg/dl) a  Vitamin D  Placebo  HDL-cholesterol (mg/dl) a  Vitamin D  Placebo  Total-cholesterol/HDL-cholesterol (ratio) a  Vitamin D  Placebo  LDL-cholesterol/HDL-cholesterol (ratio) a  Vitamin D  Placebo  Triglycerides (mg/dl) a  Vitamin D  Placebo  Fetuin A (g/l) a  Vitamin D  Placebo  dp-ucMGP pmol/lb  Vitamin D  Placebo | 156 [132 to 194]  169 [142 to 193]  90 [69 to 110]  93 [74 to 112]  40 [33 to 46]  42 [34 to 49]  4.20 [3.53 to 4.81]  4.02 [3.30 to 4.56]  2.26 [1.83 to 2.76]  2.26 [1.67 to 2.88]  213 [132 to 266]  173 [126 to 228]  0.50 [0.40 to 0.60]  0.50 [0.40 to 0.60]  367 [290 to 764]  290 [290 to 630] | 169 [139 to 195]  180 [146 to 203]  95 [74 to 117]  104 [78 to 125]  41 [33 to 46]  42 [32 to 49]  4.17 [3.53 to 5.05]  4.26 [3.72 to 5.00]  2.37 [1.91 to 2.93]  2.43 [2.02 to 2.92]  187 [140 to 283]  184 [135 to 236]  0.50 [0.30 to 0.60]  0.50 [0.40 to 0.60]  391 [319 to 1006]  290 [290 to 599] | 2.16 [-13.6 to 17.9]  2.52 [-8.55 to 13.59]  -0.61 [-3.80 to 2.57]  0.09 [-0.25 to 0.43]  0.10 [-0.15 to 0.35]  -15.6 [-62.2 to 31.0]  0.08 [-0.15 to 0.31]  -136 [-438 to 166]- | 0.786  0.653  0.703  0.601  0.449  0.509  0.478  0.370 |

Abbreviations: LDL, low density lipoprotein; HDL, high density lipoprotein; dp-ucMGP, non-phosphorylated undercarboxylated matrix gla protein

aBased on 131 blood samples (65 samples from patients assigned to placebo and 68 samples from patients assigned to vitamin D).

bBased on 52 blood samples (29 samples from patients assigned to placebo and 23 samples from patients assigned to vitamin D).

**Supplemental Table 5:** Vitamin D effects on CVD parameters in female study participants

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | Baseline | Follow up | Treatment effect | *P*-value |
| Total cholesterol (mg/dl) a  Vitamin D  Placebo  LDL-cholesterol (mg/dl) a  Vitamin D  Placebo  HDL-cholesterol (mg/dl) a  Vitamin D  Placebo  Total-cholesterol/HDL-cholesterol (ratio) a  Vitamin D  Placebo  LDL-cholesterol/HDL-cholesterol (ratio) a  Vitamin D  Placebo  Triglycerides (mg/dl) a  Vitamin D  Placebo  Fetuin A (g/l) a  Vitamin D  Placebo  dp-ucMGP pmol/lb  Vitamin D  Placebo | 170 [142 to 178]  183 [157 to 200]  97 [87 to 113]  104 [89 to 116]  42 [34 to 52]  46 [40 to 53]  3.73 [3.45 to 4.61]  4.00 [3.17 to 4.50]  2.29 [2.01 to 2.82]  2.29 [1.84 to 2.64]  145 [87 to 212]  138 [107 to 197]  0.40 [0.40 to 0.60]  0.50 [0.40 to 0.60]  290 [290 to 919]  290 [290 to 872] | 185 [153 to 201]  172 [149 to 195]  99 [83 to 118]  94 [82 to 121]  47 [41 to 56]  45 [36 to 55]  3.51 [3.25 to 4.72]  4.01 [3.03 to 4.46]  2.09 [1.73 to 2.77]  2.28 [1.64 to 2.72]  142 [103 to 185]  156 [113 to 206]  0.40 [0.30 to 0.60]  0.45 [0.40 to 0.60]  572 [305 to 874]  360 [290 to 991] | -11.6 [-45.1 to 22.0]  -7.67 [-29.7 to 14.37]  -5.69 [-12.43 to 1.05]  -0.04 [-0.66 to 0.57]  0.06 [-0.32 to 0.45]  -8.8 [-92.6 to 74.9]  0.03 [-0.06 to 0.12]  132 [-352 to 619]- | 0.486  0.482  0.095  0.891  0.740  0.830  0.462  0.568 |

Abbreviations: LDL, low density lipoprotein; HDL, high density lipoprotein; dp-ucMGP, non-phosphorylated undercarboxylated matrix gla protein

aBased on 30 blood samples (16 samples from patients assigned to placebo and 12 samples from patients assigned to vitamin D).

bBased on 18 blood samples (9 samples from patients assigned to placebo and 9 samples from patients assigned to vitamin D).