**Supplemental Table 1. Type of kits of the ten clinical chemistry analytes.**

|  |  |  |
| --- | --- | --- |
| **Name of Analyte** | **Product Number** | **Product Description** |
| TC | 05168538190 | CHOL HiCo Gen.2, 2100 Tests, cobas c701 |
| TG | 05171407190 | TRIGL, 800 Tests, cobas c701 |
| Apo A1 | 05950686190 | APO A TQ, 100 Tests, cobas c701 |
| Apo B | 05950694190 | APO B TQ, 150 Tests, cobas c701 |
| CK | 05168546190 | CK, 800 Tests, cobas c701 |
| CK-MB | 05168562190 | CKMB, 600 Tests, cobas c701 |
| Glucose | 05168791190 | GLUC HK Gen.3, 2200 Tests, cobas c701 |
| ALP | 05166888190 | ALP IFCC Gen.2, 1050 Tests, cobas c701 |
| GGT | 05168775190 | GGT Gen.2, 1200 Tests, cobas c701 |
| BUN | 05171873190 | UREAL, 1900 Tests, cobas c701 |

TC - total cholesterol. TG - triglycerides. Apo A1 - apolipoprotein A1. Apo B - apolipoprotein B. CK - creatine kinase. CK-MB - creatine kinase, isoenzyme MB. ALP - alkaline phosphatase. GGT - Gamma-glutamyltransferase. BUN – blood blood urea nitrogen.

**Supplemental Table 2. Sample size of the ten clinical chemistry analytes according to gender and age groups.**

|  |  |  |  |
| --- | --- | --- | --- |
| Analyte | Male |  | Female |
| Total | 20-29 years | 30-39 years | 40-49 years | 50-59 years | 60-79 years |  | Total | 20-29 years | 30-39 years | 40-49 years | 50-59 years | 60-79 years |
| TC | 8614 | 1769 | 3345 | 2211 | 997 | 292 |  | 7790 | 1762 | 3005 | 2100 | 740 | 183 |
| TG | 8994 | 1790 | 3486 | 2356 | 1061 | 301 |  | 7857 | 1760 | 3023 | 2126 | 762 | 186 |
| Apo A1 | 548 | 92 | 220 | 148 | 67 | 21 |  | 530 | 139 | 224 | 109 | 38 | 20 |
| Apo B | 567 | 94 | 232 | 147 | 70 | 24 |  | 546 | 147 | 229 | 110 | 39 | 21 |
| CK | 4972 | 1040 | 1884 | 1243 | 615 | 190 |  | 4527 | 1080 | 1637 | 1284 | 410 | 116 |
| CK-MB | 531 | 71 | 212 | 152 | 74 | 22 |  | 543 | 140 | 234 | 114 | 40 | 15 |
| Glucose | 8641 | 1770 | 3345 | 2216 | 1014 | 296 |  | 7749 | 1755 | 2998 | 2087 | 730 | 179 |
| ALP | 7690 | 1480 | 2916 | 2076 | 945 | 273 |  | 7189 | 1604 | 2719 | 2010 | 689 | 167 |
| GGT | 7675 | 1414 | 2915 | 2118 | 956 | 272 |  | 7258 | 1595 | 2778 | 2025 | 692 | 168 |
| BUN | 8584 | 1769 | 3334 | 2198 | 993 | 290 |  | 7743 | 1758 | 2998 | 2086 | 723 | 178 |

TC - total cholesterol. TG - triglycerides. Apo A1 - apolipoprotein A1. Apo B - apolipoprotein B. CK - creatine kinase. CK-MB - creatine kinase, isoenzyme MB. ALP - alkaline phosphatase. GGT - Gamma-glutamyltransferase. BUN - blood urea nitrogen.

**Supplemental Table 3. Characteristics of included participants of TC by gender.**

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristics | Male | Female | Total |
| No. (%) | 8614 (52.5%) | 7790 (47.5%) | 16404 |
| Age\* (years) | 37 (31-45) | 36 (30-45) | 37 (30-45) |
| BMI\* (kg/m2) | 23.6 (22.0-25.1) | 21.6 (20.2-23.3) | 22.7 (20.9-24.5) |
| Current smoking\*  | 2437(28.3%) | 220(2.8%) | 2657(16.2%) |
| Current drinking\* | 2018(23.4%) | 342(4.4%) | 2360(14.4%) |
| SBP\* (mmHg) | 114 (106-121) | 105 (98- 113) | 110 (102- 118) |
| DBP\* (mmHg) | 70 (65-76) | 65 (60-71) | 68 (62-74) |
| Hb\* (g/L) | 154 (148-159) | 132 (127- 138) | 144 (133- 154) |
| Glucose\* (mmol/L) | 5.40 (5.20-5.60) | 5.20 (5.00-5.40) | 5.30 (5.10-5.60) |
| HbA1c† (%) | 5.3 (5.2-5.5) | 5.3 (5.1 -5.4) | 5.3 (5.1 -5.5) |
| TC\* (mmol/L) | 4.50 (4.00-5.00) | 4.40 (3.90-4.90) | 4.40 (4.00-4.90) |
| TG\* (mmol/L) | 1.01 (0.76-1.33) | 0.79 (0.61-1.04) | 0.89 (0.68-1.20) |
| LDL-C\* (mmol/L) | 3.00 (2.48-3.35) | 2.68 (2.16-3.09) | 2.85 (2.31-3.23) |
| HDL-C\* (mmol/L) | 1.34 (1.20-1.55) | 1.61 (1.40-1.86) | 1.46 (1.26-1.71) |
| Creatine\* (μmol/L) | 82 (75-91) | 61 (55-70) | 73 (61-84) |
| UA\* (μmol/L) | 350 (308-391) | 252 (220-287) | 300 (249-358) |
| CK\* (U/L) | 106 (84- 139) | 69 (56-87) | 86 (66-116) |
| WBC\* (×109/L) | 5.7 (4.9-6.5) | 5.4 (4.7-6.4) | 5.6 (4.8-6.5) |
| Alb\* (g/L) | 47 (46-49) | 46 (44-47) | 47 (45-48) |
| ALT\* (U/L) | 18 (14-25) | 12 (9- 16) | 15 (11-21) |
| AST\* (U/L) | 18 (15-21) | 15 (13- 18) | 16 (14- 20) |

Continuous variables were presented as median (interquartile range), and categorical variables as percentage.

\*\* Significant difference between males and females (*P<*0.001).

\* Significant difference between males and females (*P<*0.01).

BMI - Body mass index. SBP - systolic blood pressure. DBP - diastolic blood pressure. Hb - haemoglobin. Glucose - fasting blood glucose. HbA1c - glycated haemoglobin. TG - triglycerides. TC - total cholesterol. LDL-C - low density lipoprotein cholesterol. HDL-C - high density lipoprotein cholesterol. UA - uric acid. CK - creatine kinase. WBC - white blood cells. Alb - albumin. ALT - alanine aminotransferase. AST - aspartate aminotransferase.

**Supplemental Table 4. Characteristics of included participants of TG by gender.**

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristics | Male | Female | Total |
| No. (%) | 8994 (53.4%) | 7857 (46.6%) | 16851 |
| Age\*\* (years) | 37 (31-45) | 36 (30-45) | 37 (30-45) |
| BMI\*\* (kg/m2) | 23.6 (22.1-25.2) | 21.6 (20.2-23.4) | 22.7 (21.0-24.6) |
| Current smoking\*\*  | 2581(28.7%) | 221(2.8%) | 2802(16.6%) |
| Current drinking\*\* | 2143(23.8%) | 341(4.3%) | 2484(14.7%) |
| SBP\*\* (mmHg) | 114 (107-121) | 105 (99- 113) | 110 (102- 118) |
| DBP\*\* (mmHg) | 70 (65-76) | 65 (60-71) | 68 (62-74) |
| Hb\*\* (g/L) | 154 (148-160) | 132 (127- 138) | 144 (133- 155) |
| Glucose\*\* (mmol/L) | 5.40 (5.20-5.60) | 5.20 (5.00-5.50) | 5.30 (5.10-5.60) |
| HbA1c\* (%) | 5.3 (5.2-5.5) | 5.3 (5.1 -5.4) | 5.3 (5.2-5.5) |
| TC\*\* (mmol/L) | 4.50 (4.00-5.00) | 4.40 (3.90-4.90) | 4.50 (4.00-4.90) |
| TG\*\* (mmol/L) | 1.03 (0.77-1.39) | 0.79 (0.62-1.05) | 0.90 (0.69-1.24) |
| LDL-C\*\*\* (mmol/L) | 3.00 (2.50-3.37) | 2.69 (2.16-3.09) | 2.87 (2.32-3.24) |
| HDL-C\*\*\* (mmol/L) | 1.33 (1.19-1.53) | 1.60 (1.39-1.85) | 1.45 (1.25-1.70) |
| Creatine\*\* (μmol/L) | 82 (75-91) | 61 (55-70) | 74 (61-85) |
| UA\*\* (μmol/L) | 352 (309-393) | 253 (220-287) | 302 (251-360) |
| CK\*\* (U/L) | 105 (84- 139) | 69 (56-87) | 86 (66-117) |
| WBC\*\* (×109/L) | 5.7 (4.9-6.6) | 5.5 (4.7-6.4) | 5.6 (4.8-6.5) |
| Alb\*\* (g/L) | 47 (46-49) | 46 (44-47) | 47 (45-48) |
| ALT\*\* (U/L) | 18 (14-25) | 12 (9- 16) | 15 (11-21) |
| AST\*\* (U/L) | 18 (15-21) | 15 (13- 18) | 17 (14-20) |

Continuous variables were presented as median (interquartile range), and categorical variables as percentage.

\*\* Significant difference between males and females (*P<*0.001).

\* Significant difference between males and females (*P<*0.01).

BMI - Body mass index. SBP - systolic blood pressure. DBP - diastolic blood pressure. Hb - haemoglobin. Glucose - fasting blood glucose. HbA1c - glycated haemoglobin. TG - triglycerides. TC - total cholesterol. LDL-C - low density lipoprotein cholesterol. HDL-C - high density lipoprotein cholesterol. UA - uric acid. CK - creatine kinase. WBC - white blood cells. Alb - albumin. ALT - alanine aminotransferase. AST - aspartate aminotransferase.

**Supplemental Table 5. Characteristics of included participants of Apo A1 by gender.**

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristics | Male | Female | Total |
| No. (%) | 548 (50.8%) | 530 (49.2%) | 1078 |
| Age\*\* (years) | 37 (31-46) | 34 (29-42) | 35 (30-44) |
| BMI\*\* (kg/m2) | 23.7 (22.2-25.0) | 21.6 (20.3-23.3) | 22.7 (21.1-24.5) |
| Current smoking\*\*  | 2437(28.3%) | 220 (2.8%) | 2657(16.2%) |
| Current drinking\*\* | 2018(23.4%) | 342 (4.4%) | 2360(14.4%) |
| SBP\*\* (mmHg) | 114 (108-122) | 107 (100- 114) | 111 (103- 118) |
| DBP\*\* (mmHg) | 71 (65-77) | 66 (61-71) | 69 (63-74) |
| Hb\*\* (g/L) | 154 (148-160) | 133 (127- 138) | 143 (132- 154) |
| Glucose\*\* (mmol/L) | 5.30 (5.10-5.60) | 5.10 (4.90-5.40) | 5.20 (5.00-5.50) |
| HbA1c (%) | 5.4 (5.2-5.5) | 5.3 (5.2-5.5) | 5.3 (5.2-5.5) |
| TC\*\* (mmol/L) | 4.50 (4.00-4.90) | 4.25 (3.70-4.80) | 4.40 (3.80-4.90) |
| TG\*\* (mmol/L) | 1.02 (0.79-1.42) | 0.80 (0.60-1.06) | 0.91 (0.69-1.23) |
| LDL-C\*\* (mmol/L) | 2.99 (2.54-3.40) | 2.62 (2.20-3.11) | 2.83 (2.35-3.27) |
| HDL-C\*\* (mmol/L) | 1.36 (1.22-1.59) | 1.61 (1.38-1.85) | 1.47 (1.27-1.75) |
| Creatine\*\* (μmol/L) | 84 (75-94) | 65 (56-77) | 76 (62-87) |
| UA\*\* (μmol/L) | 343 (307-389) | 247 (215-275) | 292 (243-348) |
| CK\*\* (U/L) | 101 (79- 135) | 66 (52-83) | 81 (61-110) |
| WBC\* (×109/L) | 5.5 (4.9-6.4) | 5.4 (4.6-6.3) | 5.4 (4.8-6.3) |
| Alb\*\* (g/L) | 47 (45-48) | 45 (44-47) | 46 (44-48) |
| ALT\*\* (U/L) | 18 (13-25) | 11 (9- 15) | 14 (10-20) |
| AST\*\* (U/L) | 17 (15-20) | 15 (13- 18) | 16 (14- 19) |

Continuous variables were presented as median (interquartile range), and categorical variables as percentage.

\*\* Significant difference between males and females (*P<*0.001).

\* Significant difference between males and females (*P<*0.01).

Apo A1 - apolipoprotein A1. BMI - Body mass index. SBP - systolic blood pressure. DBP - diastolic blood pressure. Hb - haemoglobin. Glucose - fasting blood glucose. HbA1c - glycated haemoglobin. TG - triglycerides. TC - total cholesterol. LDL-C - low density lipoprotein cholesterol. HDL-C - high density lipoprotein cholesterol. UA - uric acid. CK - creatine kinase. WBC - white blood cells. Alb - albumin. ALT - alanine aminotransferase. AST - aspartate aminotransferase.

**Supplemental Table 6. Characteristics of included participants of Apo B by gender.**

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristics | Male | Female | Total |
| No. (%) | 567 (50.9%) | 546 (49.1%) | 1113 |
| Age\*\* (years) | 37 (31-46) | 34 (29-42) | 35 (30-44) |
| BMI\*\* (kg/m2) | 23.7 (22.2-25.1) | 21.6 (20.3-23.3) | 22.7 (21.1-24.5) |
| Current smoking\*\*  | 169(29.8%) | 10(1.8%) | 179(16.1%) |
| Current drinking\*\* | 131(23.1%) | 25(4.6%) | 156(14.0%) |
| SBP\*\* (mmHg) | 114 (108-121) | 107 (100- 114) | 111 (103- 118) |
| DBP\*\* (mmHg) | 71 (65-77) | 65 (61-71) | 69 (63-74) |
| Hb\*\* (g/L) | 154 (148-160) | 132 (127- 138) | 143 (132- 154) |
| Glucose\*\* (mmol/L) | 5.30 (5.10-5.60) | 5.10 (4.90-5.40) | 5.20 (5.00-5.50) |
| HbA1c (%) | 5.4 (5.2-5.5) | 5.3 (5.2-5.5) | 5.3 (5.2-5.5) |
| TC\*\* (mmol/L) | 4.50 (4.00-4.90) | 4.25 (3.70-4.80) | 4.40 (3.80-4.90) |
| TG\*\* (mmol/L) | 1.00 (0.79-1.42) | 0.80 (0.60-1.06) | 0.90 (0.69-1.22) |
| LDL-C\*\* (mmol/L) | 2.99 (2.53-3.40) | 2.61 (2.16-3.11) | 2.83 (2.34-3.27) |
| HDL-C\*\* (mmol/L) | 1.37 (1.22-1.59) | 1.60 (1.38-1.85) | 1.47 (1.27-1.74) |
| Creatine\*\* (μmol/L) | 83 (75-93) | 64 (56-76) | 76 (62-86) |
| UA\*\* (μmol/L) | 343 (307-390) | 247 (215-274) | 292 (244-349) |
| CK\*\* (U/L) | 103 (80- 136) | 66 (53-83) | 81 (62-112) |
| WBC\* (×109/L) | 5.5 (4.9-6.4) | 5.4 (4.6-6.3) | 5.4 (4.8-6.3) |
| Alb\*\* (g/L) | 47 (45-48) | 45 (44-47) | 46 (44-48) |
| ALT\*\* (U/L) | 18 (13-25) | 11 (9- 15) | 14 (10-20) |
| AST\*\* (U/L) | 17 (15-20) | 15 (13- 18) | 16 (14- 19) |

Continuous variables were presented as median (interquartile range), and categorical variables as percentage.

\*\* Significant difference between males and females (*P<*0.001).

\* Significant difference between males and females (*P<*0.01).

Apo B - apolipoprotein B. BMI - Body mass index. SBP - systolic blood pressure. DBP - diastolic blood pressure. Hb - haemoglobin. Glucose - fasting blood glucose. HbA1c - glycated haemoglobin. TG - triglycerides. TC - total cholesterol. LDL-C - low density lipoprotein cholesterol. HDL-C - high density lipoprotein cholesterol. UA - uric acid. CK - creatine kinase. WBC - white blood cells. Alb - albumin. ALT - alanine aminotransferase. AST - aspartate aminotransferase.

**Supplemental Table 7. Characteristics of included participants of CK by gender.**

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristics | Male | Female | Total |
| No. (%) | 4972 (52.3%) | 4527 (47.7%) | 9499 |
| Age\*\* (years) | 37 (31-45) | 36 (30-45) | 37 (30-45) |
| BMI\*\* (kg/m2) | 23.6 (22.0-25.1) | 21.6 (20.2 -23.4) | 22.7 (20.9-24.5) |
| Current smoking\*\*  | 1460(29.4%) | 125 (2.8%) | 1585(16.7%) |
| Current drinking\*\* | 1188(23.9%) | 195 (4.3%) | 1383(14.6%) |
| SBP\*\* (mmHg) | 113 (106-121) | 105 (99- 112) | 109 (102- 118) |
| DBP\*\* (mmHg) | 70 (65-76) | 65 (60-70) | 68 (62-74) |
| Hb\*\* (g/L) | 154 (148-160) | 132 (127- 138) | 144 (133- 154) |
| Glucose\*\* (mmol/L) | 5.40 (5.20-5.60) | 5.20 (5.00-5.50) | 5.30 (5.10-5.60) |
| HbA1c\* (%) | 5.3 (5.2-5.5) | 5.3 (5.1 -5.5) | 5.3 (5.1 -5.5) |
| TC\*\* (mmol/L) | 4.50 (4.00-5.00) | 4.40 (3.90-4.90) | 4.40 (4.00-4.90) |
| TG\*\* (mmol/L) | 1.00 (0.77-1.34) | 0.78 (0.61 -1.02) | 0.89 (0.68-1.20) |
| LDL-C\*\* (mmol/L) | 3.00 (2.46-3.32) | 2.66 (2.10-3.04) | 2.85 (2.28-3.20) |
| HDL-C\*\* (mmol/L) | 1.34 (1.19-1.54) | 1.61 (1.40-1.86) | 1.46 (1.26-1.72) |
| Creatine\*\* (μmol/L) | 82 (74-90) | 61 (55-69) | 73 (60-84) |
| UA\*\* (μmol/L) | 347 (305-389) | 249 (218-284) | 297 (247-355) |
| CK\*\* (U/L) | 106 (84- 139) | 69 (56-87) | 86 (66-117) |
| WBC\*\* (×109/L) | 5.6 (4.9-6.5) | 5.4 (4.7-6.3) | 5.5 (4.8-6.4) |
| Alb\*\* (g/L) | 47 (46-49) | 46 (44-47) | 47 (45-48) |
| ALT\*\* (U/L) | 18 (14-25) | 12 (9- 16) | 15 (11-21) |
| AST\*\* (U/L) | 18 (15-21) | 16 (13- 18) | 17 (14-20) |

Continuous variables were presented as median (interquartile range), and categorical variables as percentage.

\*\* Significant difference between males and females (*P<*0.001).

\* Significant difference between males and females (*P<*0.01).

BMI - Body mass index. SBP - systolic blood pressure. DBP - diastolic blood pressure. Hb - haemoglobin. Glucose - fasting blood glucose. HbA1c - glycated haemoglobin. TG - triglycerides. TC - total cholesterol. LDL-C - low density lipoprotein cholesterol. HDL-C - high density lipoprotein cholesterol. UA - uric acid. CK - creatine kinase. WBC - white blood cells. Alb - albumin. ALT - alanine aminotransferase. AST - aspartate aminotransferase.

**Supplemental Table 8. Characteristics of included participants of CK-MB by gender.**

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristics | Male | Female | Total |
| No. (%) | 531 (49.4%) | 543 (50.6%) | 1074 |
| Age\*\* (years) | 38 (33-46) | 34 (29-42) | 36 (31-45) |
| BMI\*\* (kg/m2) | 23.8 (22.3-25.2) | 21.7 (20.2-23.5) | 22.8 (21.1-24.6) |
| Current smoking\*\*  | 146 (27.5%) | 11 (2.0%) | 157(14.6%) |
| Current drinking\*\* | 134(25.2%) | 25(4.6%) | 159(14.8%) |
| SBP\*\* (mmHg) | 114 (108-122) | 106 (100- 114) | 110 (103- 118) |
| DBP\*\* (mmHg) | 72 (67-78) | 66 (61-71) | 69 (63-74) |
| Hb\*\* (g/L) | 154 (148-160) | 132 (126- 138) | 143 (132- 154) |
| Glucose\*\* (mmol/L) | 5.30 (5.10-5.60) | 5.20 (4.90-5.40) | 5.25 (5.00-5.50) |
| HbA1c\* (%) | 5.4 (5.2-5.5) | 5.3 (5.2-5.5) | 5.3 (5.2-5.5) |
| TC\*\* (mmol/L) | 4.50 (4.00-4.90) | 4.20 (3.80-4.80) | 4.40 (3.90-4.90) |
| TG\*\* (mmol/L) | 1.06 (0.80-1.42) | 0.81 (0.62-1.06) | 0.91 (0.69-1.24) |
| LDL-C\*\* (mmol/L) | 3.00 (2.56-3.41) | 2.59 (2.19-3.09) | 2.81 (2.34-3.26) |
| HDL-C\*\* (mmol/L) | 1.35 (1.20-1.57) | 1.61 (1.42-1.87) | 1.47 (1.28-1.75) |
| Creatine\*\* (μmol/L) | 83 (75-93) | 64 (56-76) | 75 (62-86) |
| UA\*\* (μmol/L) | 350 (309-394) | 250 (218-279) | 292 (245-353) |
| CK\*\* (U/L) | 102 (80- 139) | 65 (52-83) | 80 (61-111) |
| WBC\* (×109/L) | 5.5 (4.9-6.4) | 5.4 (4.6-6.3) | 5.4 (4.8-6.4) |
| Alb\*\* (g/L) | 47 (45-48) | 45 (44-47) | 46 (44-48) |
| ALT\*\* (U/L) | 18 (14-26) | 11 (8- 15) | 14 (10-20) |
| AST\*\* (U/L) | 18 (15-21) | 15 (13- 18) | 16 (14- 19) |

Continuous variables were presented as median (interquartile range), and categorical variables as percentage.

\*\* Significant difference between males and females (*P<*0.001).

\* Significant difference between males and females (*P<*0.01).

CK-MB - creatine kinase, isoenzyme MB. BMI - Body mass index. SBP - systolic blood pressure. DBP - diastolic blood pressure. Hb - haemoglobin. Glucose - fasting blood glucose. HbA1c - glycated haemoglobin. TG - triglycerides. TC - total cholesterol. LDL-C - low density lipoprotein cholesterol. HDL-C - high density lipoprotein cholesterol. UA - uric acid. CK - creatine kinase. WBC - white blood cells. Alb - albumin. ALT - alanine aminotransferase. AST - aspartate aminotransferase.

**Supplemental Table 9. Characteristics of included participants of glucose by gender.**

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristics | Male | Female | Total |
| No. (%) | 8641 (52.7%) | 7749 (47.3%) | 16390 |
| Age\*\* (years) | 37 (31-45) | 36 (30-45) | 37 (30-45) |
| BMI\*\* (kg/m2) | 23.6 (22.0-25.2) | 21.6 (20.2-23.3) | 22.7 (20.9-24.5) |
| Current smoking\*\*  | 2444 (28.3%) | 219 (2.8%) | 2663(16.3%) |
| Current drinking\*\* | 2023(23.4%) | 341(4.4%) | 2364(14.4%) |
| SBP\*\* (mmHg) | 114 (106-121) | 105 (98- 113) | 110 (102- 118) |
| DBP\*\* (mmHg) | 70 (65-76) | 65 (60-71) | 68 (62-74) |
| Hb\*\* (g/L) | 154 (148-159) | 132 (127- 138) | 144 (133- 154) |
| Glucose\*\* (mmol/L) | 5.40 (5.20-5.60) | 5.20 (5.00-5.40) | 5.30 (5.10-5.60) |
| HbA1c\* (%) | 5.3 (5.2-5.5) | 5.3 (5.1 -5.4) | 5.3 (5.1 -5.5) |
| TC\*\* (mmol/L) | 4.50 (4.00-5.00) | 4.40 (3.90-4.90) | 4.40 (4.00-4.90) |
| TG\*\* (mmol/L) | 1.01 (0.76-1.33) | 0.78 (0.61-1.03) | 0.89 (0.68-1.20) |
| LDL-C\*\* (mmol/L) | 3.00 (2.48-3.35) | 2.68 (2.16-3.08) | 2.85 (2.31-3.22) |
| HDL-C\*\* (mmol/L) | 1.34 (1.19-1.54) | 1.61 (1.40-1.86) | 1.46 (1.26-1.71) |
| Creatine\*\* (μmol/L) | 82 (75-91) | 61 (55-70) | 74 (61-85) |
| UA\*\* (μmol/L) | 350 (308-391) | 252 (220-287) | 300 (249-358) |
| CK\*\* (U/L) | 105 (84- 139) | 69 (56-87) | 86 (66 -116) |
| WBC\*\* (×109/L) | 5.7 (4.9-6.5) | 5.4 (4.7-6.4) | 5.6 (4.8-6.5) |
| Alb\*\* (g/L) | 47 (46-49) | 46 (44-47) | 47 (45-48) |
| ALT\*\* (U/L) | 18 (14-25) | 12 (9- 16) | 15 (11-21) |
| AST\*\* (U/L) | 18 (15-21) | 15 (13- 18) | 16 (14- 20) |

Continuous variables were presented as median (interquartile range), and categorical variables as percentage.

\*\* Significant difference between males and females (*P<*0.001).

\* Significant difference between males and females (*P<*0.01).

BMI - Body mass index. SBP - systolic blood pressure. DBP - diastolic blood pressure. Hb - haemoglobin. Glucose - fasting blood glucose. HbA1c - glycated haemoglobin. TG - triglycerides. TC - total cholesterol. LDL-C - low density lipoprotein cholesterol. HDL-C - high density lipoprotein cholesterol. UA - uric acid. CK - creatine kinase. WBC - white blood cells. Alb - albumin. ALT - alanine aminotransferase. AST - aspartate aminotransferase.

**Supplemental Table 10. Characteristics of included participants of ALP by gender.**

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristics | Male | Female | Total |
| No. (%) | 7690 (51.7%) | 7189 (48.3%) | 14879 |
| Age\*\* (years) | 38 (31-45) | 36 (30-45) | 37 (30-45) |
| BMI\*\* (kg/m2) | 23.6 (22.0-25.2) | 21.6 (20.2-23.3) | 22.7 (20.9 -24.5) |
| Current smoking\*\*  | 2213(28.8%) | 209(2.9%) | 2422(16.3%) |
| Current drinking\*\* | 1866(24.3%) | 331 (4.6%) | 2197(14.8%) |
| SBP\*\* (mmHg) | 114 (106-121) | 105 (99- 113) | 110 (102- 118) |
| DBP\*\* (mmHg) | 70 (65-76) | 65 (60-71) | 68 (62-74) |
| Hb\*\* (g/L) | 154 (148-159) | 132 (127- 138) | 143 (132- 154) |
| Glucose\*\* (mmol/L) | 5.40 (5.20-5.60) | 5.20 (5.00-5.42) | 5.30 (5.10-5.60) |
| HbA1c\* (%) | 5.3 (5.2-5.5) | 5.3 (5.1 -5.4) | 5.3 (5.1 -5.5) |
| TC\*\* (mmol/L) | 4.50 (4.00-5.00) | 4.40 (3.90-4.90) | 4.40 (4.00-4.90) |
| TG\*\* (mmol/L) | 1.01 (0.77-1.33) | 0.79 (0.62-1.04) | 0.89 (0.68-1.20) |
| LDL-C\*\* (mmol/L) | 3.00 (2.49-3.35) | 2.69 (2.17-3.08) | 2.85 (2.31-3.22) |
| HDL-C\*\* (mmol/L) | 1.34 (1.20-1.55) | 1.61 (1.40-1.85) | 1.46 (1.26-1.71) |
| Creatine\*\* (μmol/L) | 82 (75-90) | 61 (55-70) | 73 (61-84) |
| UA\*\* (μmol/L) | 351 (309-392) | 252 (220-287) | 299 (249-357) |
| CK\*\* (U/L) | 105 (83- 139) | 69 (55-87) | 85 (65-115) |
| WBC\*\* (×109/L) | 5.7 (4.9-6.6) | 5.4 (4.7-6.4) | 5.6 (4.8-6.5) |
| Alb\*\* (g/L) | 47 (46-49) | 46 (44-47) | 47 (45-48) |
| ALT\*\* (U/L) | 18 (14-25) | 12 (9- 16) | 15 (11-21) |
| AST\*\* (U/L) | 17 (15-21) | 15 (13- 18) | 16 (14- 19) |

Continuous variables were presented as median (interquartile range), and categorical variables as percentage.

\*\* Significant difference between males and females (*P<*0.001).

\* Significant difference between males and females (*P<*0.01).

ALP - alkaline phosphatase. BMI - Body mass index. SBP - systolic blood pressure. DBP - diastolic blood pressure. Hb - haemoglobin. Glucose - fasting blood glucose. HbA1c - glycated haemoglobin. TG - triglycerides. TC - total cholesterol. LDL-C - low density lipoprotein cholesterol. HDL-C - high density lipoprotein cholesterol. UA - uric acid. CK - creatine kinase. WBC - white blood cells. Alb - albumin. ALT - alanine aminotransferase. AST - aspartate aminotransferase.

**Supplemental Table 11. Characteristics of included participants of γ-GGT by gender.**

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristics | Male | Female | Total |
| No. (%) | 7675 (51.4%) | 7258 (48.6%) | 14933 |
| Age\*\* (years) | 38 (31.00-45.00) | 36 (30.00-45.00) | 37 (31.00-45.00) |
| BMI\*\* (kg/m2) | 23.6 (22.1-25.2) | 21.6 (20.2-23.3) | 22.7 (20.9-24.5) |
| Current smoking\*\*  | 2194 (28.6%) | 206 (2.8%) | 2400 (16.1%) |
| Current drinking\*\* | 1880 (24.5%) | 326 (4.5%) | 2206 (14.8%) |
| SBP\*\* (mmHg) | 114 (106-121) | 105 (99- 113) | 110 (102- 118) |
| DBP\*\* (mmHg) | 71 (65-76) | 65 (60-71) | 68 (62-74) |
| Hb\*\* (g/L) | 154 (148-159) | 132 (127- 138) | 143 (132-154) |
| Glucose\*\* (mmol/L) | 5.40 (5.20-5.60) | 5.20 (5.00-5.42) | 5.30 (5.10-5.60) |
| HbA1c\* (%) | 5.3 (5.2-5.5) | 5.3 (5.1-5.4) | 5.3 (5.1-5.5) |
| TC\*\* (mmol/L) | 4.50 (4.00-5.00) | 4.40 (3.90-4.90) | 4.40 (4.00-4.90) |
| TG\*\* (mmol/L) | 1.01 (0.77-1.34) | 0.79 (0.61-1.04) | 0.89 (0.68-1.20) |
| LDL-C\*\* (mmol/L) | 3.00 (2.50-3.37) | 2.69 (2.18-3.09) | 2.85 (2.32-3.23) |
| HDL-C\*\* (mmol/L) | 1.34 (1.20-1.55) | 1.61 (1.40-1.85) | 1.47 (1.26-1.72) |
| Creatine\*\* (μmol/L) | 82 (75-91) | 62 (55-70) | 73 (61-84) |
| UA\*\* (μmol/L) | 351 (309-392) | 252 (220-287) | 299 (249-357) |
| CK\*\* (U/L) | 105 (83-140) | 69 (55-87) | 85 (65-115) |
| WBC\*\* (×109/L) | 5.7 (4.9-6.6) | 5.4 (4.7-6.4) | 5.6 (4.8-6.5) |
| Alb\*\* (g/L) | 47 (46-49) | 46 (44-47) | 47 (45-48) |
| ALT\*\* (U/L) | 18 (14-24) | 12 (9-16) | 15 (11-21) |
| AST\*\* (U/L) | 18 (15-21) | 15 (13-18) | 16 (14-19) |

Continuous variables were presented as median (interquartile range), and categorical variables as percentage.

\*\* Significant difference between males and females (*P<*0.001).

\* Significant difference between males and females (*P<*0.01).

γ-GGT - Gamma-glutamyltransferase. BMI - Body mass index. SBP - systolic blood pressure. DBP - diastolic blood pressure. Hb - haemoglobin. Glucose - fasting blood glucose. HbA1c - glycated haemoglobin. TG - triglycerides. TC - total cholesterol. LDL-C - low density lipoprotein cholesterol. HDL-C - high density lipoprotein cholesterol. UA - uric acid. CK - creatine kinase. WBC - white blood cells. Alb - albumin. ALT - alanine aminotransferase. AST - aspartate aminotransferase.

**Supplemental Table 12. Characteristics of included participants of BUN by gender.**

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristics | Male | Female | Total |
| No. (%) | 8584 (52.6%) | 7743 (47.4%) | 16327 |
| Age\*\* (years) | 37 (31-45) | 36 (30-44) | 36 (30-45) |
| BMI\*\* (kg/m2) | 23.6 (22.0-25.1) | 21.6 (20.2-23.3) | 22.7 (20.9 -24.5) |
| Current smoking\*\*  | 2423(28.2%) | 218(2.8%) | 2641(16.2%) |
| Current drinking\*\* | 2003(23.3%) | 338(4.4%) | 2341(14.3%) |
| SBP\*\* (mmHg) | 114 (106-121) | 105 (98- 113) | 110 (102- 118) |
| DBP\*\* (mmHg) | 70 (65-76) | 65 (60-71) | 68 (62-74) |
| Hb\*\* (g/L) | 154 (148-159) | 132 (127- 138) | 144 (133- 154) |
| Glucose\*\* (mmol/L) | 5.40 (5.20-5.60) | 5.20 (5.00-5.40) | 5.30 (5.10-5.60) |
| HbA1c\* (%) | 5.3 (5.2-5.5) | 5.3 (5.1 -5.4) | 5.3 (5.1 -5.5) |
| TC\*\* (mmol/L) | 4.50 (4.00-5.00) | 4.40 (3.90-4.90) | 4.40 (4.00-4.90) |
| TG\*\* (mmol/L) | 1.00 (0.76-1.33) | 0.78 (0.61-1.03) | 0.89 (0.68-1.20) |
| LDL-C\*\* (mmol/L) | 3.00 (2.48-3.35) | 2.68 (2.16-3.07) | 2.85 (2.30-3.22) |
| HDL-C\*\* (mmol/L) | 1.34 (1.20-1.55) | 1.61 (1.40-1.86) | 1.46 (1.26-1.71) |
| Creatine\*\* (μmol/L) | 82 (75-91) | 61 (55-70) | 74 (61-84) |
| UA\*\* (μmol/L) | 350 (308-391) | 252 (220-287) | 300 (249-358) |
| CK\*\* (U/L) | 106 (84- 139) | 69 (56-87) | 86 (66 -116) |
| WBC\*\* (×109/L) | 5.7 (4.9-6.5) | 5.4 (4.7-6.4) | 5.6 (4.8-6.5) |
| Alb\*\* (g/L) | 47 (46-49) | 46 (44-47) | 47 (45-48) |
| ALT\*\* (U/L) | 18 (14-25) | 12 (9- 16) | 15 (11-21) |
| AST\*\* (U/L) | 18 (15-21) | 15 (13- 18) | 16 (14- 19) |

Continuous variables were presented as median (interquartile range), and categorical variables as percentage.

\*\* Significant difference between males and females (*P<*0.001).

\* Significant difference between males and females (*P<*0.01).

BUN - blood urea nitrogen. BMI - Body mass index. SBP - systolic blood pressure. DBP - diastolic blood pressure. Hb - haemoglobin. Glucose - fasting blood glucose. HbA1c - glycated haemoglobin. TG - triglycerides. TC - total cholesterol. LDL-C - low density lipoprotein cholesterol. HDL-C - high density lipoprotein cholesterol. UA - uric acid. CK - creatine kinase. WBC - white blood cells. Alb - albumin. ALT - alanine aminotransferase. AST - aspartate aminotransferase.