**SUPPLEMENTAL MATERIAL**

**SupplementalTable 1.** Baseline characteristics of WHS participants according to concordant or discordant LDL-C and non-HDL-C categories

| | LDL-C < median | | LDL-C ≥ median | |
|---|---|---|---|---|
| | **NHDL-C < median (Concordant)** | **NHDL-C ≥ median (Discordant)** | **NHDL-C < median (Discordant)** | **NHDL-C ≥ median (Concordant)** |
| | N=12,026 | N=1,569 | N=1,616 | N=12,322 |
| Age, mean (SD), y | 53.5 (6.6) | 55.1 (7.0) | 54.2 (7.1) | 55.9 (7.3) |
| Current smoking, % | 9.4 | 16.1 | 8.8 | 13.5 |
| Hypertension, % | 20.1 | 34.9 | 18.8 | 29.6 |
| Diabetes, % | 1.9 | 6.1 | 1.2 | 3.3 |
| Postmenopausal, % | 58.2 | 75.3 | 59.4 | 74.1 |
| Hormone use, % | 45.6 | 56.2 | 35.2 | 41.2 |
| Parental history of premature MI, % | 11.5 | 15.7 | 12.6 | 13.9 |
| Body mass index, mean (SD), $kg/m^2$ | 25.1 (4.8) | 27.8 (5.4) | 24.8 (4.4) | 26.6 (4.9) |
| Laboratory measurements, median ($25^{th}$-$75^{th}$ percentile) | | | | |
| LDL-C, mg/dL | 98 (86-109) | 113 (105-118) | 126 (123-130) | 148 (135-165) |
| NHDL-C, mg/dL | 126 (111-138) | 164 (158-175) | 148 (144-151) | 184 (169-207) |
| HDL-C, mg/dL | 54 (45-65) | 41 (35-51) | 57 (49-67) | 50 (42-60) |
| Triglycerides, mg/dL | 95 (70-134) | 249 (186-348) | 83 (67-103) | 146 (106-201) |
| ApoB, mg/dL | 83 (72-92) | 112 (100-122) | 96 (91-104) | 122 (110-136) |
| LDL-P, nmol/L | 977 (824-1148) | 1356 (1169-1552) | 1144 (1026-1271) | 1484 (1270-1735) |
| LDL size, nm | 21.2 (20.8-21.6) | 20.4 (19.8-21.0) | 21.4 (21.1-21.7) | 21.1 (20.5-21.5) |
| Cholesterol per LDL particle* | 2562 (2206-2947) | 2098 (1799-2459) | 2864 (2578-3208) | 2614 (2279-3026) |
| hsCRP, mg/L | 1.65 (0.62-3.80) | 3.72 (1.89-6.69) | 1.05 (0.48-2.51) | 2.34 (1.06-4.76) |

Median values of LDL-C and NHDL-C were 121 mg/dL and 154 mg/dL

SD: standard deviation; Parental history: history of myocardial infarction in parent <60 years old; hsCRP: high-sensitivity C-reactive protein.

*Estimate of the number of cholesterol molecules per LDL particle, calculated by dividing LDL-C (nmol/L) by LDL-P (nmol/L).

**Supplemental Table 2.** Baseline characteristics of WHS participants according to concordant or discordant LDL-C and apoB categories

| | LDL-C < median | | LDL-C ≥ median | |
|---|---|---|---|---|
| | **ApoB < median (Concordant)** | **ApoB ≥ median (Discordant)** | **ApoB < median (Discordant)** | **ApoB ≥ median (Concordant)** |
| | N=11,033 | N=2,562 | N=2,634 | N=11,304 |
| Age, mean (SD), y | 53.3 (6.5) | 55.4 (7.1) | 54.1 (7.0) | 56.0 (7.3) |
| Current smoking, % | 9.5 | 12.8 | 8.9 | 13.9 |
| Hypertension, % | 19.2 | 32.8 | 18.9 | 30.6 |
| Diabetes, % | 1.8 | 5.0 | 1.1 | 3.5 |
| Postmenopausal, % | 56.7 | 74.9 | 60.9 | 75.0 |
| Hormone use, % | 44.2 | 58.0 | 35.1 | 41.7 |
| Parental history of premature MI, % | 11.5 | 14.0 | 11.9 | 14.1 |
| Body mass index, mean (SD), $kg/m^2$ | 25.0 (4.7) | 27.5 (5.5) | 24.9 (4.2) | 26.7 (5.0) |
| Laboratory measurements, median ($25^{th}$-$75^{th}$ percentile) | | | | |
| LDL-C, mg/dL | 98 (85-108) | 111 (101-117) | 130 (125-139) | 148 (135-166) |
| NHDL-C, mg/dL | 125 (110-137) | 152 (142-164) | 157 (148-169) | 185 (170-207) |
| HDL-C, mg/dL | 55 (46-66) | 42 (35-52) | 60 (51-71) | 49 (42-58) |
| Triglycerides, mg/dL | 93 (68-131) | 182 (129-266) | 94 (73-125) | 149 (107-204) |
| ApoB, mg/dL | 81 (71-89) | 112 (106-121) | 93 (88-97) | 124 (113-138) |
| LDL-P, nmol/L | 955 (806-1109) | 1359 (1182-1533) | 1121 (993-1243) | 1522 (1315-1761) |
| LDL size, nm | 21.3 (20.9-21.6) | 20.7 (20.0-21.2) | 21.4 (21.1-21.7) | 21.1 (20.5-21.5) |
| Cholesterol per LDL particle* | 2607 (2269-2986) | 2067 (1769-2396) | 3061 (2729-3541) | 2559 (2243-2931) |
| hsCRP, mg/L | 1.56 (0.59-3.62) | 3.40 (1.58-6.29) | 1.24 (0.55-2.84) | 2.41 (1.11-4.87) |

Median values of LDL-C and apoB were 121 mg/dL and 100 mg/dL, respectively.
SD: standard deviation; Parental history: history of myocardial infarction in parent <60 years old; hsCRP: high-sensitivity C-reactive protein.
*Estimate of the number of cholesterol molecules per LDL particle, calculated by dividing LDL-C (nmol/L) by LDL-P (nmol/L).

**Supplemental Table 3.** Baseline characteristics of WHS participants according to concordant or discordant LDL-C and LDL-P categories

| | LDL-C < median | | LDL-C ≥ median | |
|---|---|---|---|---|
| | **LDL-P < median (Concordant)** | **LDL-P ≥ median (Discordant)** | **LDL-P < median (Discordant)** | **LDL-P ≥ median (Concordant)** |
| | N=10,341 | N=3,254 | N=3,430 | N=10,508 |
| Age, mean (SD), y | 53.3 (6.6) | 54.9 (7.0) | 54.6 (7.1) | 56.0 (7.3) |
| Current smoking, % | 9.5 | 12.3 | 10.3 | 13.9 |
| Hypertension, % | 18.5 | 32.3 | 20.2 | 31.0 |
| Diabetes, % | 1.7 | 4.5 | 1.1 | 3.7 |
| Postmenopausal, % | 56.9 | 70.6 | 63.6 | 75.3 |
| Hormone use, % | 44.3 | 54.7 | 36.7 | 41.7 |
| Parental history of premature MI, % | 11.3 | 14.3 | 12.7 | 14.0 |
| Body mass index, mean (SD), $kg/m^2$ | 24.7 (4.6) | 27.7 (5.5) | 24.9 (4.4) | 26.9 (5.0) |
| Laboratory measurements, median ($25^{th}$-$75^{th}$ percentile) | | | | |
| LDL-C, mg/dL | 97 (84-108) | 109 (99-115) | 133 (126-145) | 149 (135-167) |
| NHDL-C, mg/dL | 124 (109-137) | 147 (135-159) | 162 (152-176) | 187 (170-209) |
| HDL-C, mg/dL | 56 (47-67) | 43 (36-52) | 61 (52-71) | 48 (41-57) |
| Triglycerides, mg/dL | 92 (67-129) | 163 (113-235) | 97 (74-129) | 152 (110-210) |
| ApoB, mg/dL | 80 (70-89) | 104 (94-114) | 99 (91-109) | 125 (113-139) |
| LDL-P, nmol/L | 931 (794-1057) | 1374 (1282-1511) | 1093 (997-1158) | 1555 (1379-1787) |
| LDL size, nm | 21.3 (21.0-21.6) | 20.7 (20.1-21.1) | 21.5 (21.2-21.8) | 21.0 (20.4-21.4) |
| Cholesterol per LDL particle* | 2688 (2396-3033) | 1990 (1746-2189) | 3276 (2989-3671) | 2483 (2206-2764) |
| hsCRP, mg/L | 1.49 (0.57-3.51) | 3.29 (1.51-6.10) | 1.28 (0.57-2.90) | 2.51 (1.17-4.97) |

Median values of LDL-C and LDL-P were 121 mg/dL and 1216 nmol/L, respectively.
SD: standard deviation; Parental history: history of myocardial infarction in parent <60 years old; hsCRP: high-sensitivity C-reactive protein.
*Estimate of the number of cholesterol molecules per LDL particle, calculated by dividing LDL-C (nmol/L) by LDL-P (nmol/L).

**Supplemental Table 4.** Underestimation or overestimation of coronary risk among women with LDL-C discordant with all three alternative LDL-related measures (NHDL-C, apoB, and LDL-P)

| | **LDL-C < median**<br>**NHDL-C & ApoB & LDL-P < median**<br>**(Concordant)** | **LDL-C < median**<br>**NHDL-C & ApoB & LDL-P ≥ median**<br>**(Discordant)** | **P value** |
|---|---|---|---|
| LDL-C, median ($25^{th}$-$75^{th}$ percentile), mg/dL | 96 (83-107) | 114 (107-118) | |
| NHDL-C, median ($25^{th}$-$75^{th}$ percentile), mg/dL | 122 (107-133) | 167 (160-178) | |
| ApoB, median ($25^{th}$-$75^{th}$ percentile), mg/dL | 79 (69-87) | 117 (111-126) | |
| LDL-P, median ($25^{th}$-$75^{th}$ percentile), nmol/L | 915 (783-1042) | 1508 (1376-1663) | |
| No. events/N | 150/9,355 | 63/908 | |
| Incidence rate, per 1000 p-y (95% CI) | 0.99 (0.84-1.16) | 4.57 (3.57-5.85) | |
| Age-adjusted HR (95% CI) | 1.00 | 3.90 (2.90-5.25) | <0.001 |
| Minimally-adjusted HR (95% CI) * | 1.00 | 2.91 (2.14-3.96) | <0.001 |
| Fully-adjusted HR (95% CI) † | 1.00 | 1.69 (1.08-2.65) | 0.02 |
| | **LDL-C ≥ median**<br>**NHDL-C & ApoB & LDL-P ≥ median**<br>**(Concordant)** | **LDL-C ≥ median**<br>**NHDL-C & ApoB & LDL-P < median**<br>**(Discordant)** | **P value** |
| LDL-C, median ($25^{th}$-$75^{th}$ percentile), mg/dL | 151 (138-169) | 126 (123-129) | |
| NHDL-C, median ($25^{th}$-$75^{th}$ percentile), mg/dL | 190 (174-212) | 147 (142-150) | |
| ApoB, median ($25^{th}$-$75^{th}$ percentile), mg/dL | 127 (117-141) | 92 (87-95) | |
| LDL-P, median ($25^{th}$-$75^{th}$ percentile), nmol/L | 1587 (1409-1814) | 1056 (956-1131) | |
| No. events/N | 591/9435 | 8/856 | |
| Incidence rate, per 1000 p-y (95% CI) | 4.05 (3.73-4.39) | 0.58 (0.29-1.15) | |
| Age-adjusted HR (95% CI) | 1.00 | 0.16 (0.08-0.32) | <0.001 |
| Minimally-adjusted HR (95% CI) * | 1.00 | 0.20 (0.10-0.39) | <0.001 |
| Fully-adjusted HR (95% CI) † | 1.00 | 0.41 (0.20-0.84) | 0.02 |

* Minimally-adjusted model included age, treatment assignment, hormone use, postmenopausal status, smoking, blood pressure

† Minimally-adjusted model variables plus diabetes, body mass index, HDL cholesterol, triglycerides, high-sensitivity C-reactive protein, parental history of premature myocardial infarction

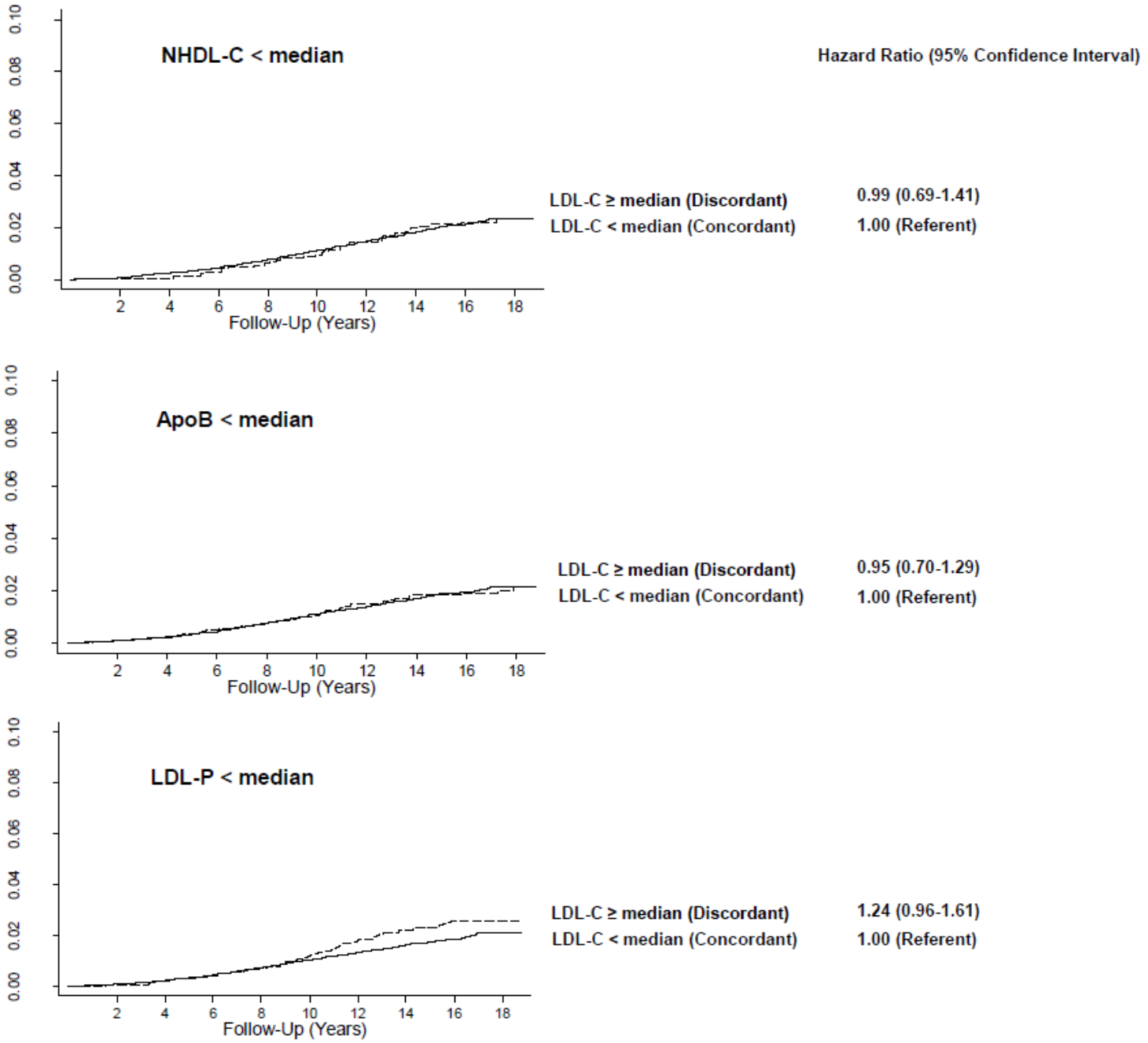
Median values of LDL-C, NHDL-C, apoB, and LDL-P were 121 mg/dL, 154 mg/dL, 100 mg/dL, and 1216 nmol/L, respectively.

**Supplemental Figure Legends**

**Supplemental Figure 1.** Cumulative probability of incident CHD events by concordant and discordant LDL-C among women with <median NHDL-C, apoB, or LDL-P. Median values of LDL-C, NHDL-C, apoB, and LDL-P were 121 mg/dL, 154 mg/dL, 100 mg/dL, and 1216 nmol/L, respectively. Hazard ratios and 95% confidence intervals obtained from Cox regression models. P for trend obtained from log-rank test.

**Supplemental Figure 2.** Cumulative probability of incident CHD events by concordant and discordant LDL-C among women with ≥ median NHDL-C, apoB, or LDL-P. Median values of LDL-C, NHDL-C, apoB, and LDL-P were 121 mg/dL, 154 mg/dL, 100 mg/dL, and 1216 nmol/L, respectively. Hazard ratios and 95% confidence intervals obtained from Cox regression models. P for trend obtained from log-rank test.

Supplemental Figure 1.



Supplemental Figure 2.