

Supplementary Table 2. Results of the causal mediation analysis

| CMA | ACME (95% CI) | | ADE (95% CI) | | Total effects (95% CI) | | Proportion mediated (95% CI) | | Average |
|---------------------------|---|---|---|---|---|---|--|--|--|
| | Control | Treated | Control | Treated | Average | Control | Treated | | |
| CMA for IO, ALT, and IR | | | | | | | | | |
| Women | 0.0463 (0.0321 to 0.06) ^c | 0.0472 (0.0330 to 0.06) ^c | 0.0468 (0.0325 to 0.06) ^c | 0.0537 (-0.0137 to 0.12) | 0.0532 (-0.0135 to 0.12) | 0.1 (0.0329 to 0.17) ^b | 0.4633 (0.2523 to 1.36) ^b | 0.474 (0.2590 to 1.35) ^b | 0.4687 (0.2552 to 1.36) ^b |
| Men | 0.04195 (0.03070 to 0.06) ^c | 0.04344 (0.03218 to 0.06) ^c | 0.04269 (0.03140 to 0.06) ^c | 0.05261 (0.00450 to 0.10) ^a | 0.05186 (0.00442 to 0.10) ^a | 0.09456 (0.04551 to 0.14) ^c | 0.44431 (0.26165 to 0.91) ^c | 0.46131 (0.28107 to 0.91) ^c | 0.45281 (0.27134 to 0.91) ^c |
| CMA for IO, Apo-B, and IR | | | | | | | | | |
| Women | 0.02434 (0.01228 to 0.04) ^c | 0.02505 (0.01259 to 0.04) ^c | 0.0247 (0.01244 to 0.04) ^c | 0.07568 (0.00643 to 0.15) ^a | 0.07603 (0.00646 to 0.15) ^a | 0.10073 (0.03165 to 0.17) ^b | 0.23962 (0.10817 to 0.76) ^b | 0.2476 (0.11251 to 0.76) ^b | 0.24361 (0.11025 to 0.76) ^b |
| Men | 0.0212 (0.0127 to 0.03) ^c | 0.0223 (0.0137 to 0.03) ^c | 0.0218 (0.0132 to 0.03) ^c | 0.0722 (0.0226 to 0.12) ^b | 0.0728 (0.0228 to 0.12) ^b | 0.0946 (0.0448 to 0.14) ^b | 0.2204 (0.1163 to 0.47) ^b | 0.2333 (0.1241 to 0.49) ^b | 0.2268 (0.1200 to 0.48) ^b |
| CMA for IO, TG, and Apo-B | | | | | | | | | |
| Women | 0.02907 (0.02114 to 0.04) ^c | 0.02907 (0.02114 to 0.04) ^c | 0.02907 (0.02114 to 0.04) ^c | 0.0406 (-0.00587 to 0.03) | 0.0406 (-0.00587 to 0.03) | 0.0406 (0.02093 to 0.06) ^c | 0.49084 to 1.27) ^c | 0.49084 to 1.27) ^c | 0.72087 (0.49084 to 1.27) ^c |
| Men | 0.031608 (0.025691 to 0.04) ^c | 0.031608 (0.025691 to 0.04) ^c | 0.031608 (0.025691 to 0.04) ^c | 0.045314 (0.000628 to 0.03) ^a | 0.045314 (0.000628 to 0.03) ^a | 0.045314 (0.032418 to 0.06) ^c | 0.69614 (0.520931 to 0.98) ^c | 0.69614 (0.520931 to 0.98) ^c | 0.69614 (0.520931 to 0.98) ^c |
| CMA for IO, ALT, and TG | | | | | | | | | |
| Women | 0.0782 (0.0572 to 0.10) ^c | 0.0782 (0.0572 to 0.10) ^c | 0.0782 (0.0572 to 0.10) ^c | 0.2992 (0.2175 to 0.38) ^c | 0.221 (0.1385 to 0.30) ^c | 0.2992 (0.2175 to 0.38) ^c | 0.2594 (0.1830 to 0.38) ^c | 0.2594 (0.1830 to 0.38) ^c | 0.2594 (0.1830 to 0.38) ^c |
| Men | 0.1008 (0.0785 to 0.12) ^c | 0.1008 (0.0785 to 0.12) ^c | 0.1008 (0.0785 to 0.12) ^c | 0.4161 (0.3546 to 0.48) ^c | 0.3153 (0.2546 to 0.38) ^c | 0.4161 (0.3546 to 0.48) ^c | 0.2412 (0.1894 to 0.31) ^c | 0.2412 (0.1894 to 0.31) ^c | 0.2412 (0.1894 to 0.31) ^c |

CMA, causal mediation analysis; ACME, average causal mediation effect; CI, confidence interval; ADE, average direct effect; IO, iron overload; ALT, alanine aminotransferase; IR, insulin resistance; Apo-B, apolipoprotein B; TG, triglyceride.
^aP<0.05, ^bP<0.01, ^cP<0.001.