

FIGURES

Figure 1. Map of Peru indicating the CRONICAS Cohort Study's sites.

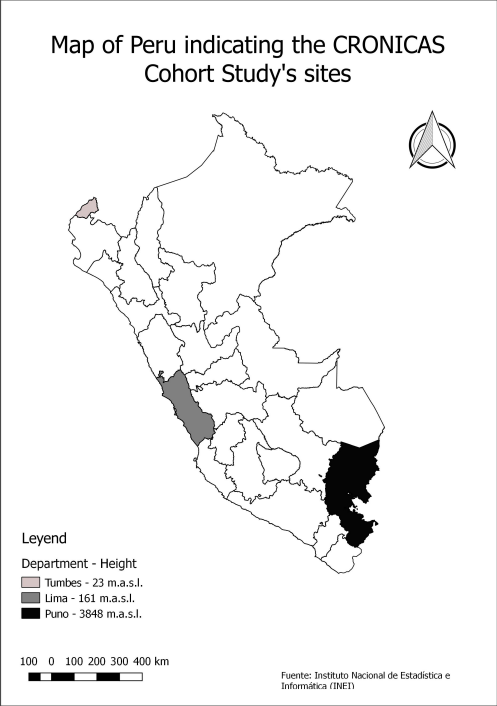
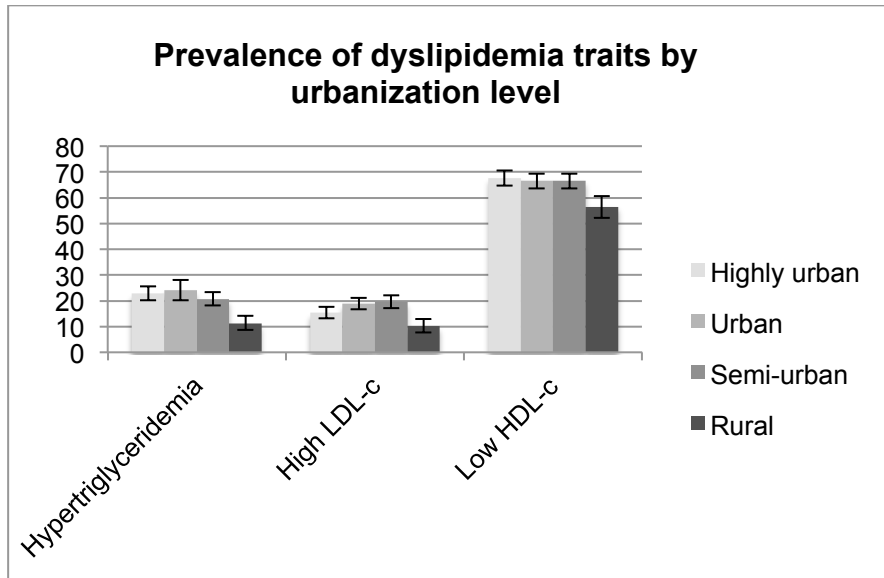
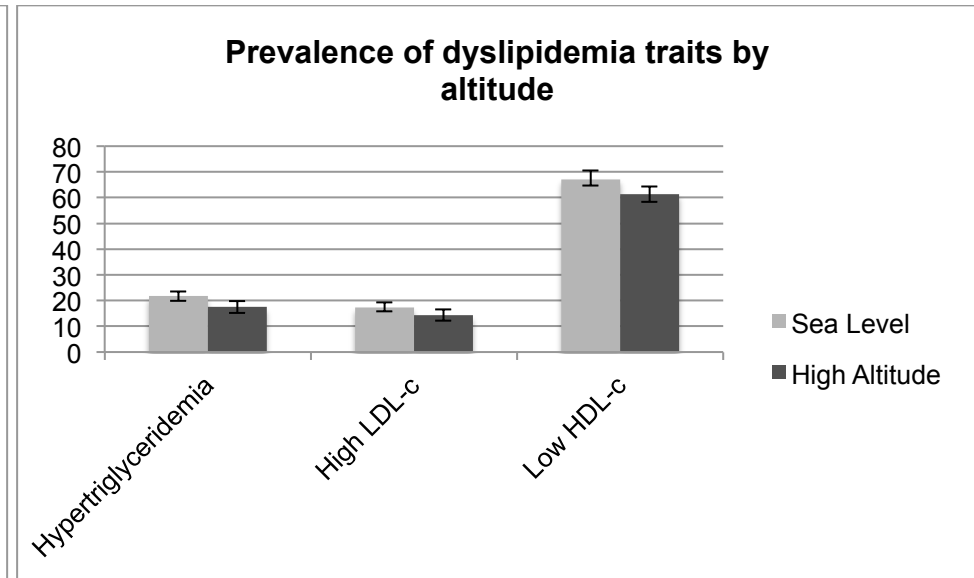


Figure 2. Prevalence of dyslipidemia traits by urbanization level and altitude

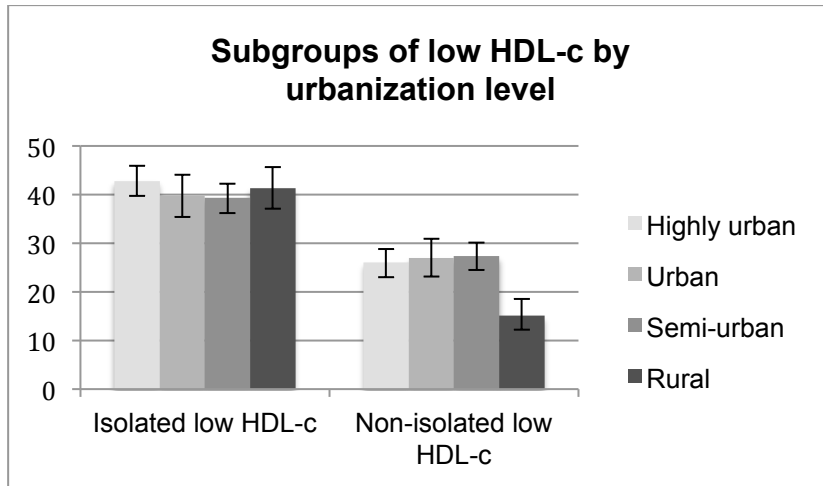


Hypertriglyceridemia ($p < 0.001$), High LDL-c ($p < 0.001$), Low HDL-c ($p < 0.001$)

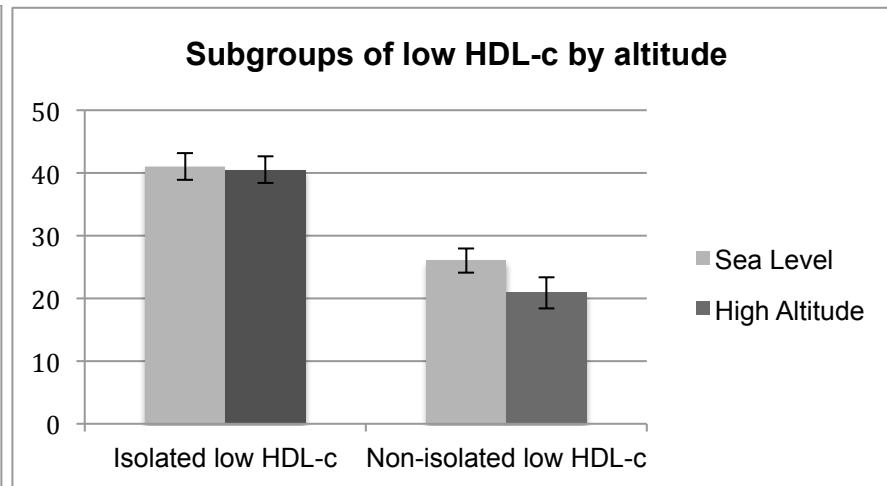


Hypertriglyceridemia ($p = 0.006$), High LDL-c ($p = 0.03$), Low HDL-c ($p = 0.002$)

Figure 3. Prevalence of subgroups of low HDL-c by urbanization level and altitude

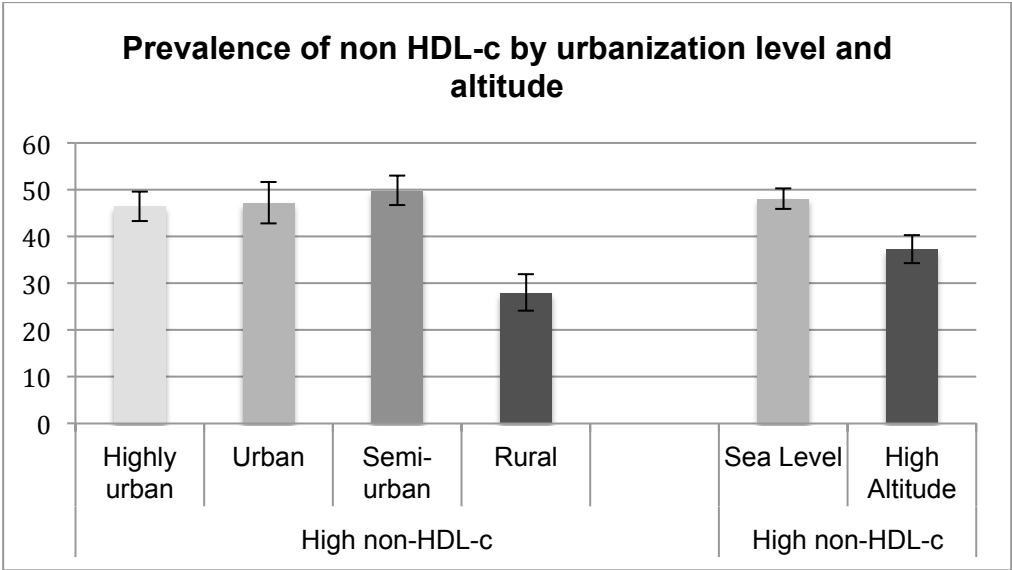


Isolated low HDL-c ($p=0.05$), Non-isolated low HDL-c ($p=0.05$)



Isolated low HDL-c ($p<0.001$), Non-isolated low HDL-c ($p<0.001$)

Figure 4. Prevalence of high non HDL-c by urbanization level and altitude



Urbanization level ($p < 0.001$), Altitude ($p < 0.001$)

TABLES

Table 1. Means of the plasma lipids

| | Total (N=3,037) | Sea level highly urban (N=1,005) | High altitude urban (N=506) | Sea level semi-urban (N=991) | High altitude rural (N=535) | p |
|--------------------------|----------------------------|---|--|---|--|----------|
| Triglycerides, mean (SD) | 149.0 (70.0) | 154.8 (73.1) | 159.3 (69.3) | 149.4 (68.9) | 127.7 (61.9) | <0.001 |
| LDL-c, mean (SD) | 127.2 (34.5) | 127.6 (33.4) | 128.7 (36.7) | 131.9 (33.8) | 116.4 (33.1) | <0.001 |
| HDL-c, mean (SD) | 41.9 (11.4) | 41.3 (11.2) | 41.7 (10.9) | 41.2 (11.8) | 44.4 (11.3) | <0.001 |
| Non-HDL-c, mean (SD) | 156.9 (39.5) | 158.5 (38.5) | 160.6 (41.2) | 161.7 (38.4) | 141.9 (38.4) | <0.001 |

Table 2: Characteristics of the study population by dyslipidemia traits

| | N | Hypertriglyceridemia n (%) | p | High LDL-c n (%) | p | Low HDL-c n (%) | p | High non-HDL-c n (%) | p |
|-----------------------------|-------|-------------------------------|--------|---------------------|--------|--------------------|--------|-------------------------|--------|
| Socio-demographics | | | | | | | | | |
| Sex | | | | | | | | | |
| Female | 1,565 | 298 (19.0%) | 0.08 | 291 (18.6%) | <0.001 | 1,176 (75.1%) | <0.001 | 708 (45.2%) | 0.33 |
| Male | 1,472 | 318 (21.6%) | | 206 (14.0%) | | 802 (54.5%) | | 640 (43.5%) | |
| Age | | | | | | | | | |
| 35 - 44 years | 742 | 131 (17.7%) | <0.001 | 88 (11.9%) | <0.001 | 527 (71.0%) | <0.001 | 289 (38.9%) | <0.001 |
| 45 – 54 years | 771 | 181 (23.5%) | | 135 (17.5%) | | 509 (66.0%) | | 359 (46.6%) | |
| 55 – 64 years | 766 | 190 (24.8%) | | 158 (20.6%) | | 503 (65.7%) | | 398 (51.9%) | |
| 65+ years | 756 | 114 (15.1%) | | 115 (15.2%) | | 438 (57.9%) | | 301 (39.8%) | |
| Education level | | | | | | | | | |
| < 7 years | 1,394 | 237 (17.0%) | <0.001 | 209 (15.0%) | 0.11 | 897 (64.4%) | 0.28 | 567 (40.7%) | 0.001 |
| 7 – 11 years | 1,001 | 201 (20.1%) | | 169 (16.9%) | | 646 (64.5%) | | 469 (46.9%) | |
| 12+ years | 640 | 178 (27.8%) | | 119 (18.6%) | | 434 (67.8%) | | 312 (48.8%) | |
| Socioeconomic status | | | | | | | | | |
| Lowest tertile | 948 | 135 (14.2%) | <0.001 | 123 (13.0%) | 0.003 | 591 (62.3%) | 0.03 | 336 (35.4%) | <0.001 |
| Middle tertile | 1,042 | 210 (20.2%) | | 183 (17.6%) | | 676 (64.9%) | | 472 (45.3%) | |
| Highest tertile | 1,047 | 271 (25.9%) | | 191 (18.2%) | | 711 (67.9%) | | 540 (51.6%) | |
| Lifestyles behaviors | | | | | | | | | |
| Daily smoking | | | | | | | | | |
| No | 2,939 | 593 (20.2%) | 0.43 | 479 (16.3%) | 0.59 | 1,924 (65.5%) | 0.03 | 1,302 (44.3%) | 0.61 |
| Yes | 98 | 23 (23.5%) | | 18 (18.4%) | | 54 (55.1%) | | 46 (46.9%) | |
| Hazardous drinking | | | | | | | | | |

| | | | | | | | | | |
|-------------------------------|-------|-------------|--------|-------------|--------|---------------|--------|---------------|--------|
| No | 2,625 | 517 (19.7%) | 0.04 | 444 (16.9%) | 0.04 | 1,762 (67.1%) | <0.001 | 1,170 (44.6%) | 0.60 |
| Yes | 412 | 99 (24.0%) | | 53 (12.9%) | | 216 (52.4%) | | 178 (43.2%) | |
| Physical activity | | | | | | | | | |
| Low | 972 | 196 (20.2%) | 0.89 | 171 (17.6%) | 0.18 | 651 (67.0%) | 0.14 | 452 (46.5%) | 0.10 |
| Moderate/high | 2,061 | 420 (20.4%) | | 323 (15.7%) | | 1,324 (64.2%) | | 893 (43.3%) | |
| Measurements | | | | | | | | | |
| Body mass index | | | | | | | | | |
| <25 kg/m ²) | 904 | 81 (9.0%) | <0.001 | 105 (11.6%) | <0.001 | 408 (45.1%) | <0.001 | 255 (28.2%) | <0.001 |
| ≥25 and <30 kg/m ² | 1,322 | 306 (23.2%) | | 229 (17.3%) | | 913 (69.1%) | | 643 (48.6%) | |
| ≥30 kg/m ² | 807 | 229 (28.4%) | | 163 (20.2%) | | 654 (81.0%) | | 449 (55.6%) | |
| Hypertension | | | | | | | | | |
| No | 2,253 | 445 (19.8%) | 0.19 | 339 (15.1%) | 0.001 | 1,452 (64.5%) | 0.19 | 953 (42.3%) | <0.001 |
| Yes | 780 | 171 (21.9%) | | 158 (20.3%) | | 523 (67.1%) | | 394 (50.5%) | |
| Diabetes | | | | | | | | | |
| No | 2,797 | 551 (19.7%) | <0.001 | 446 (16.0%) | 0.03 | 1,806 (64.6%) | 0.03 | 1,227 (43.9%) | 0.05 |
| Yes | 240 | 65 (27.1%) | | 51 (21.3%) | | 172 (71.7%) | | 121 (50.4%) | |

* Low HDL-c = Isolated low HDL and/or high LDL-c and/or hypertriglyceridemia