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| |  | | --- | | **Table 3: Immune Cell Absolute Values and Percentages by Short-Term 3-, 5-, 7-, and 14-Day Shiftwork Status among Buffalo, New York Police Officers** | | | | | | | | |
| **Dependent Variables** | **Day** | **Evening** | **Night** | **Evening + Night** | **p-values** | | |
| **D vs. E** | **D vs. N** | **D vs. E+N** |
| 3-Day Shiftwork | | | | | | | |
|  | n=214 | n=98 | n=67 | n=165 |  |  |  |
| White Blood Cells (x10^9/L) | 5.63 (5.39-5.88) | 6.05 (5.67-6.42) | 6.06 (5.64-6.47) | 6.05 (5.74-6.37) | 0.04 | 0.06 | 0.01 |
| Neutrophil Absolute (x10^9/L) | 3.20 (3.02-3.38) | 3.26 (3.00-3.52) | 3.29 (2.99-3.60) | 3.27 (3.06-3.49) | 0.69 | 0.58 | 0.56 |
| Lymphocyte Absolute (x10^9/L) | 1.75 (1.67-1.83) | 1.94 (1.82-2.06) | 1.99 (1.85-2.13) | 1.96 (1.86-2.06) | <0.01 | <0.01 | <0.01 |
| Monocyte Absolute (x10^9/L) | 0.45 (0.43-0.47) | 0.51 (0.48-0.55) | 0.50 (0.47-0.54) | 0.51 (0.48-0.54) | <0.01 | 0.01 | <0.01 |
| Neutrophil % | 56.2 (54.8-57.5) | 54.7 (52.8-56.7) | 54.1 (51.8-56.3) | 54.5 (52.9-56.1) | 0.18 | 0.09 | 0.07 |
| Lymphocyte % | 32.3 (31.0-33.5) | 33.2 (31.5-35.0) | 33.2 (31.2-35.3) | 33.2 (31.8-34.7) | 0.32 | 0.40 | 0.26 |
| Monocyte % | 8.22 (7.87-8.57) | 8.99 (8.49-9.49) | 8.47 (7.88-9.06) | 8.78 (8.37-9.20) | <0.01 | 0.44 | 0.02 |
| Eosinophil % | 2.78 (2.51-3.04) | 2.78 (2.40-3.16) | 3.17 (2.73-3.61) | 2.94 (2.62-3.25) | 0.99 | 0.11 | 0.40 |
| Basophil % | 0.55 (0.51-0.59) | 0.53 (0.47-0.59) | 0.48 (0.41-0.55) | 0.51 (0.46-0.56) | 0.42 | 0.05 | 0.12 |
| 5-Day Shiftwork | | | | | | | |
|  | n=201 | n=107 | n=76 | n=183 |  |  |  |
| White Blood Cells (x10^9/L) | 5.57 (5.33-5.82) | 5.91 (5.58-6.24) | 6.0 (5.63-6.39) | 5.95 (5.68-6.23) | 0.08 | 0.04 | 0.02 |
| Neutrophil Absolute (x10^9/L) | 3.20 (3.02-3.38) | 3.21 (2.96-3.46) | 3.25 (2.96-3.54) | 3.23 (3.02-3.44) | 0.92 | 0.75 | 0.81 |
| Lymphocyte Absolute (x10^9/L) | 1.73 (1.65-1.81) | 1.93 (1.82-2.04) | 2.03 (1.91-2.16) | 1.97 (1.88-2.07) | <0.01 | <0.01 | <0.01 |
| Monocyte Absolute (x10^9/L) | 0.44 (0.42-0.46) | 0.51 (0.48-0.54) | 0.51 (0.48-0.55) | 0.51 (0.49-0.54) | <0.01 | <0.01 | <0.01 |
| Neutrophil % | 56.4 (55.1-57.8) | 54.5 (52.6-56.3) | 53.1 (50.9-55.2) | 53.9 (52.3-55.4) | 0.06 | 0.01 | 0.01 |
| Lymphocyte % | 32.1 (30.9-33.4) | 33.4 (31.7-35.1) | 34.2 (32.2-36.1) | 33.7 (32.3-35.1) | 0.19 | 0.07 | 0.06 |
| Monocyte % | 8.16 (7.81-8.52) | 9.00 (8.51-9.48) | 8.58 (8.02-9.14) | 8.82 (8.42-9.23) | <0.01 | 0.18 | 0.01 |
| Eosinophil % | 2.77 (2.50-3.04) | 2.79 (2.42-3.16) | 3.14 (2.72-3.56) | 2.94 (2.63-3.24) | 0.93 | 0.11 | 0.37 |
| Basophil % | 0.56 (0.51-0.60) | 0.52 (0.46-0.58) | 0.49 (0.42-0.56) | 0.51 (0.46-0.56) | 0.25 | 0.09 | 0.10 |
| 7-Day Shiftwork | | | | | | | |
|  | n=200 | n=104 | n=82 | n=186 |  |  |  |
| White Blood Cells (x10^9/L) | 5.58 (5.34-5.83) | 5.90 (5.56-6.23) | 5.99 (5.62-6.36) | 5.94 (5.66-6.21) | 0.10 | 0.05 | 0.03 |
| Neutrophil Absolute (x10^9/L) | 3.22 (3.03-3.40) | 3.20 (2.94-3.45) | 3.22 (2.94-3.50) | 3.20 (3.00-3.41) | 0.86 | 0.99 | 0.92 |
| Lymphocyte Absolute (x10^9/L) | 1.72 (1.64-1.80) | 1.94 (1.82-2.05) | 2.05 (1.92-2.17) | 1.98 (1.89-2.08) | <0.01 | <0.01 | <0.01 |
| Monocyte Absolute (x10^9/L) | 0.44 (0.42-0.46) | 0.51 (0.48-0.54) | 0.51 (0.48-0.55) | 0.51 (0.48-0.54) | <0.01 | <0.01 | <0.01 |
| Neutrophil % | 56.6 (55.3-57.9) | 54.3 (52.5-56.2) | 52.8 (50.7-54.8) | 53.6 (52.1-55.1) | 0.03 | <0.01 | <0.01 |
| Lymphocyte % | 32.0 (30.7-33.2) | 33.5 (31.8-35.2) | 34.5 (32.6-36.4) | 33.9 (32.5-35.3) | 0.11 | 0.02 | 0.02 |
| Monocyte % | 8.16 (7.80-8.52) | 9.01 (8.52-9.50) | 8.60 (8.06-9.15) | 8.83 (8.43-9.24) | <0.01 | 0.15 | 0.01 |
| Eosinophil % | 2.74 (2.48-3.02) | 2.81 (2.44-3.19) | 3.14 (2.73-3.55) | 2.95 (2.65-3.26) | 0.75 | 0.09 | 0.25 |
| Basophil % | 0.55 (0.51-0.60) | 0.51 (0.46-0.57) | 0.50 (0.44-0.57) | 0.51 (0.46-0.56) | 0.24 | 0.15 | 0.12 |
| 14-Day Shiftwork | | | | | | | |
|  | n=199 | n=105 | n=84 | n=189 |  |  |  |
| White Blood Cells (x10^9/L) | 5.57 (5.32-5.81) | 5.93 (5.60-6.26) | 5.97 (5.60-6.33) | 5.94 (5.68-6.21) | 0.06 | 0.05 | 0.02 |
| Neutrophil Absolute (x10^9/L) | 3.21 (3.03-3.40) | 3.22 (2.97-3.47) | 3.20 (2.93-3.48) | 3.21 (3.01-3.41) | 0.97 | 0.97 | 0.99 |
| Lymphocyte Absolute (x10^9/L) | 1.71 (1.63-1.80) | 1.94 (1.83-2.05) | 2.04 (1.92-2.16) | 1.99 (1.90-2.07) | <0.01 | <0.01 | <0.01 |
| Monocyte Absolute (x10^9/L) | 0.44 (0.42-0.46) | 0.51 (0.48-0.54) | 0.51 (0.48-0.54) | 0.51 (0.48-0.54) | <0.01 | <0.01 | <0.01 |
| Neutrophil % | 56.7 (55.3-58.0) | 54.3 (52.5-56.2) | 52.7 (50.7-54.7) | 53.6 (52.1-55.1) | 0.03 | <0.01 | <0.01 |
| Lymphocyte % | 31.9 (30.7-33.2) | 33.5 (31.8-35.2) | 34.6 (32.7-36.4) | 34.0 (32.6-35.3) | 0.11 | 0.01 | 0.02 |
| Monocyte % | 8.14 (7.78-8.50) | 8.99 (8.51-9.48) | 8.59 (8.06-9.13) | 8.82 (8.42-9.21) | <0.01 | 0.14 | 0.01 |
| Eosinophil % | 2.73 (2.46-3.00) | 2.85 (2.48-3.21) | 3.12 (2.72-3.52) | 2.97 (2.67-3.27) | 0.57 | 0.09 | 0.19 |
| Basophil % | 0.55 (0.51-0.59) | 0.52 (0.47-0.58) | 0.50 (0.44-0.56) | 0.51 (0.47-0.56) | 0.37 | 0.16 | 0.17 |
| Values represent least-square means and 95% confidence intervals via general linear models. **Abbreviations**: D = day, E = evening, N = night. **Adjustments**: All models adjusted for sex, age, tobacco use, triglycerides, glycosylated hemoglobin, leptin, and amount of vegetable and fruit servings consumed per day. | | | | | | | |
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