

26. SWACSM Abstract

Fit (and Healthy) for Duty: Lipid Profiles and Fitness Relationships from Police Officers in a Health and Wellness Program

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ABSTRACT

Police work can place officers at risk of cardiovascular disease (CVD). Sedentary activities, stress, shift work, sleep loss, reduced physical activity, and poor dietary choices contribute to this risk. Lipid profiles (total cholesterol, low-density lipoproteins [LDL], high-density lipoproteins [HDL], triglycerides) can indicate CVD risk. **PURPOSE:** To detail the lipid profiles of police officers from a health and wellness program in 2018-2019, and correlate lipid profiles with fitness. **METHODS:** Archival data for officers from 2 years of the program were analyzed (2018: 169 males, 39 females; 2019: 194 males, 43 females). Bloodwork (total cholesterol, LDL, HDL, triglycerides) was collected in a fasted or non-fasted state at the selection of the officer. Fitness data included estimated maximal aerobic capacity ($\dot{V}O_{2max}$); sit-and-reach; push-ups; vertical jump; grip strength; sit-ups; and absolute and relative 1RM bench press. Data were analyzed by year, and lipid profiles were categorized from national standards. Partial correlations controlling for sex and age derived relationships between lipid profiles and fitness ($p < 0.05$). **RESULTS:** Across both years, 68-76% of officers had desirable total cholesterol ($< 200\text{mg/dL}$) and HDL ($\geq 60\text{mg/dL}$); 67-72% of officers had desirable triglycerides ($< 150\text{mg/dL}$). However, 54-62% of officers had LDL above desirable ($\geq 100\text{mg/dL}$); 13-14% of officers had mildly high triglycerides ($150-199\text{mg/dL}$); 16-18% had high triglycerides ($200-499\text{mg/dL}$). In 2018, HDL correlated with $\dot{V}O_{2max}$ ($r=0.23$) and sit-ups ($r=0.18$); triglycerides related to sit-ups ($r=-0.20$). In 2019, HDL correlated with $\dot{V}O_{2max}$ ($r=0.20$). **CONCLUSIONS:** Most officers had good lipid profiles relative to CVD risk. As the program was voluntary, results could be due to healthy worker effect. There were officers who had poorer lipid profiles who would benefit from continued program participation, validating the importance of such programming within departments. Higher $\dot{V}O_{2max}$ and more sit-ups related to higher HDL, which is preferable. In 2018, lower triglycerides related to higher sit-ups. However, the correlation strengths were low, and there were no other significant relationships. This could indicate the need for a multifaceted approach to reducing CVD risk in officers (fitness, diet, wellness education).