

Effects of a Sedentary vs. Active Lifestyle on Blood Glucose Uptake

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Leading a sedentary lifestyle has shown to increase the risk of developing cardiovascular and metabolic disorders. **PURPOSE:** To examine the effects of sedentary (SED) vs. active (ACT) lifestyles on blood glucose (BG) uptake at rest and during the recovery phase of exercise to identify whether a possible predisposition for metabolic or cardiovascular disease exists in young adults. **METHODS:** Seven SED (age 21.0 ± 0.6 years; height 164.8 ± 6.2 cm; weight 57.9 ± 8.5 kg; % body fat $16.7 \pm 5.6\%$) and thirteen ACT (age 20.3 ± 1.0 years; height 173.3 ± 9.5 cm; weighing 66.8 ± 9.7 kg; % Body Fat $13.0 \pm 6.2\%$) individuals participated in the study. After obtaining baseline measures, BG was monitored at 15 minute intervals under two separate conditions; resting (R) and exercise (E). Before, during, and after E conditions, subjects' heart rate (HR), blood pressure (BP), and rate of perceived exertion (RPE) were also measured. All subjects performed the R condition followed by E condition. Each condition was separated by a minimum of 24 hours. A 2 x 2 ANOVA was performed to make comparisons between groups (SED vs. ACT) and conditions (R vs. E). **RESULTS:** For the baseline measure, significantly higher resting HR was seen in SED when compared to ACT (SED 95.3 ± 13.9 vs ACT 79.9 ± 14.5 bpm). Furthermore, a trend of higher BG was shown in SED throughout the hour post exercise when compared to ACT. However, these differences were not significant.

Blood Glucose (mg·dl ⁻¹)	SED		ACT	
	REST	POST EXERCISE	REST	POST EXERCISE
Resting	83.3 ± 17.1	88.5 ± 14.3	81.9 ± 9.0	85.5 ± 9.6
Minute 15	115.0 ± 14.1	125.5 ± 21.4	121.3 ± 25.4	121.7 ± 18.7
Minute 30	135.5 ± 53.5	148.0 ± 50.6	144.0 ± 28.9	135.3 ± 21.5
Minute 45	136.0 ± 38.4	145.5 ± 54.8	137.2 ± 29.3	135.5 ± 21.6
Minute 60	118.8 ± 27.5	117.7 ± 18.4	116.9 ± 24.5	116.7 ± 20.4

CONCLUSION: Sedentary lifestyle in young adults may lead to alterations in cardiovascular function. Although the difference in metabolic function between SED and ACT groups was less clear, a shift towards an active lifestyle should still be considered to promote an individual's health and well-being.