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# Associations between the Sedentary Behavior and Cardiovascular Risk Factors in Adults of 40-49year

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**Objective** Large amounts of pieces of evidence suggest sedentary behavior(SB) might have a negative impact on all-cause mortality, cardiovascular disease, and metabolic system. Our aim is to explore the associations between sedentary behavior and cardiovascular risk factors in adults of 40-49year.
**Methods** Participants(N=372) were adults 40-49 years old who had a survey by using adult sit-Q-7d. The indexes of body mass index(BMI) and Waist circumference(WC) were measured as per standard protocols and blood pressure measured using an automated sphygmomanometer (Carescape V100; GE Healthcare, UK) following five minutes seated rest. HDL cholesterol (HDL-C), LDL cholesterol (LDL-C), triglycerides(TG) and fasting plasma glucose(FPG) were assessed for blood sampling of venous blood following an overnight fast (Cholestech LDX; Alere Inc, USA). We analyzed data in 2 h/day and 1 h/day as segmentation criteria of sitting time were classified as 8 groups(0<2, 2-4, 4-6, 6-8, 8-10, >10 h/day) and 10 groups(<1, 1-2, 2-3, 3-4, 4-5, 5-6, 6-7, 7-8, 8-9，>9 h/day). Statistical analyses were performed using STATA software 15.0(STATA Corp, College Station, TX). We performed multiple linear regression models adjusting for health-related confounders to assess the associations between SB of difference range and risk factors of cardiovascular disease.
**Results** (1)When the sitting time as category criteria in 2 h/day, the relationship of LDL-C(β=0.651，95%CI=0.069 to 1.232, P=0.028) and HDL-C(β=0.129，95%CI=0.013 to 0.245, P=0.028) to sitting time in segment of 6-8h/day were statistically significant after adjustment for relative factor of risk; and the same in TC(β=0.932，95%CI=0.244 to 1.620, P=0.008) to sitting time in segment of 8-10h/day; (2) When the sitting time as category criteria in 1 h/day, in 3-4h/day segment, the index of BMI(β=1.550，95%CI=0.025 to 3.074, P=0.046) had a significant rise; in 7-8h/day segment, the index of LDL-C(β=0.919，95%CI=0.155 to 1.683, P=0.019) also had a significant rise; as well as, in 8-9h/day segment, the index of TC(β=1.531，95%CI=0.497 to 2.565, P=0.004) had a highly significant. (3) As has mentioned above, the threshold for each segment of sitting time for the index of LDL-C in 7-8h/day segment and the index of TC in 8-9h/day.
**Conclusions** This study suggests that (1) the different category criteria of sitting time, for categories criteria in 1h/d or 2h/d, will help reduce the risk of Cardiovascular risk in some degree and determining to their dose-response relationships. (2) For the 40-49year adult of health, the sitting time threshold is less than 7 h/d, in order to decrease the detrimental effects on metabolic markers associated with cardiovascular disease and metabolic system. (3) As well as the sitting time threshold is less than 3 h/d for adding to the negative aging effect on risk of cardiovascular markers.