

Paper Category:	Physical Activity and Exercise
Paper Title: (Arial Font; 14 Pt Size)	Both Physical Activity and Sedentary Behaviour Independently Associated with Skeletal Muscle Mass and Bone Mineral Density among Community-dwelling Middle-aged Women
Abstract Body: (Arial Font; 12Pt Size)	<ul style="list-style-type: none"> • Background • Objectives • Method • Results • Discussions and Conclusions
<ul style="list-style-type: none"> • Background Since both skeletal muscle mass and bone mineral density(BMD) decline with age, it is important to consider these factors simultaneously when addressing prevention strategies. Although physical activity(PA) and sedentary behaviour(SB) are known to be related to these two factors respectively, there is limited evidence to recognize interactions for all of these factors. • Objectives This study aimed to examine how PA and SB affect both skeletal muscle mass and BMD among middle-aged community-dwelling women. • Method This cross-sectional study included 199 community-dwelling middle-aged(40-64years) women (age51.6 ± 6.4years) from Aomori prefecture, Japan. They were divided according to the combination of BMD and skeletal muscle index(SMI): Group1, non-low BMD and non-low SMI; Group2, low BMD and non-low SMI; Group3, non-low BMD and low SMI; and Group4, low BMD and low SMI. Low BMD was defined as T-score generated based on the speed of sound using quantitative ultrasonography of less than -1.43, since the value reported to be closely related to the cut-off point using DXA for osteoporosis by WHO, and low SMI was defined as a value of less than 5.7kg/m^2(BIA) according to the recommendations by AWGS. The PA and SB was measured using activity trackers. Multinomial logistic regression analysis was performed to examine how PA and SB affect the combination of BMD and SMI. • Results Multivariate multinomial logistic regression analysis (reference, Group4) showed that odds ratios (95%CI) of PA in Group3, 2 and 1 were 1.611(0.821-3.158), 2.133(1.174-3.876) and 2.368(1.323-4.239); and odds ratios (95%CI) of SB in Group3, 2 and 1 were 0.996(0.989-1.004), 0.993(0.987-0.999) and 0.992(0.986-0.999), respectively. The interaction term between PA and SB was not statistically significant in all groups. • Discussions and Conclusions Both PA and SB were independently associated with BMD and SMI, implying attention should be paid not only to PA but also to SB in maintaining muscle and bone health. 	

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